

## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 1, Problem No. 16

Rep: Russia

Opp: Belarus

Rev: Poland

Lindner, Thomas

| REPORT |   |  |                                     |   |   |                              |                                      | DISCUSSION WITH OPPONENT     |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |   |
|--------|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|------------------------------|--------------------------------------|---|---|
|        | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses | reporter's conduct at the discussion |   |   |
| 0      | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |                              |                                      | 0   | concise and correct or no questions asked |
| 1      | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         |                              |                                      |   |   |
| 2      | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              |                              |                                      |   |   |
| 3      | X   | X                                      | X                                   | X   | X   | X                            | X                                    | X                            | X                                    | X   | X   |
| 4      | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 |                              |                                      |   |   |
| 5      | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |                              |                                      |   |   |
| 6      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |                              |                                      |   |   |
| 7      |   |  |                                     |   |   |                              |                                      |                              |                                      |   |   |

NOTES:

explain the deviation from predicted values

## OPPONENT

Start from 1 and add/subtract

$$1 + 0.5 + 2.5 + 2.5 - 0 = 7$$

| QUESTIONS ASKED                     |   | OPPOSITION (SPEECH)                                     |  |  |  |   | DISCUSSION WITH REPORTER                 |  |   |  |                                     | ANSWERS TO JURY and REVIEWER'S QUESTIONS     |  |
|-------------------------------------|---|---|--|--|--|---|--|--|---|--|-------------------------------------|--|--|
| 0                                   | too few, mostly irrelevant                                | understanding of presentation                           | relevant topics addressed                | own opinions presented                           | prioritisation                           | time management                               | relevant scientific topics               | own opinions presented                           | opponent's conduct of the discussion                  | prioritisation                           | 0                                   | concise and correct or no questions asked    |  |
| <input checked="" type="checkbox"/> | relevant, aimed at resolving unclear points in the report | almost nothing  | no or irrelevant                         | too few  | no                                       | poor  | almost no                                | too few  | poor  | no                                       | <input checked="" type="checkbox"/> | some incorrect, inconclusive or too long     |  |
| 1                                   |   | some main points  | few                                      | some   | some                                     | reasonable                                    | few                                      | some   | <input checked="" type="checkbox"/> some aspects fine | some                                     |                                     | deeply incorrect or show deep misconceptions |  |
| 2                                   | + short, apt and clear, well prioritized, all time used   | main points   | some                                     | <input checked="" type="checkbox"/> some correct | reasonable                               | fair  | some                                     | some correct                                     | good  | reasonable                               | -1                                  |  |  |
|                                     |   | <input checked="" type="checkbox"/> all relevant points | <input checked="" type="checkbox"/> many | many correct                                     | <input checked="" type="checkbox"/> fair | <input checked="" type="checkbox"/> efficient | <input checked="" type="checkbox"/> good | <input checked="" type="checkbox"/> many correct | some aspects efficient                                | <input checked="" type="checkbox"/> fair |                                     |  |  |
|                                     |   | practically all points                                  | practically all                          | + improvement suggestions                        | very good                                | + all time used                               | new crucial point(s)                     | + improvement suggestions                        | overall efficient                                     | very good                                | -2                                  |  |  |
| NOTES:                              |   |   |  |  |  |   |  |  |   |  |                                     |  |  |

NOTES:

also ask questions about the theory! good point on qualitative explanation.

## REVIEWER

Start from 1 and add/subtract

$$1 + 1.5 + 2 + 1.5 + 1 + 0 - 0 = 7$$

| QUESTIONS ASKED                                    | REVIEW OF REPORT                  | REVIEW OF OPPOSITION | DISCUSSION ANALYSIS   | MISSED POINTS POINTED OUT | ANSWERS TO JURY QUESTIONS                      |
|--|-----------------------------------|----------------------|-----------------------|---------------------------|--|
| 0 too few, mostly irrelevant                       | report evaluation & understanding | speech evaluation    | discussion evaluation | correct own opinions      | 0 concise and correct or no questions asked    |
| 1 relevant, meant to clarify unclear points        | poor/wrong                        | poor/wrong           | almost no             | too few                   | 1 some incorrect, inconclusive or too long     |
| 2 + suitably allotted to Rep & Opp, most time used | partial                           | too short/long       | too short/long        | some                      | 2 deeply incorrect or show deep misconceptions |
|  | good                              | informative, apt     | relevant parts        | many                      |  |
|  | detailed, complex                 | condensed & accurate | accurate, conclusive  | fully adequate            |  |

NOTES:

good to bring up pressure &amp; time-param

# REPORTER

Start from 1 and add/subtract

$$1 + 3 + 1 - \square = 5$$



# SCORESHEET

Fight 3 Z, Stage: 1, Problem No. \_\_\_\_\_

Rep: Russia *P. G. G. G.*

Opp: Belarus

signature *Mathelitsch*  
Mathelitsch, Leopold

Striopany Rev: Poland *Leopold*

| REPORT | phenomenon explanation                          | theory/model                           | relevant experiments                 | comparison between theory and experiment      | own contribution                          | task fulfillment             | science communication                | DISCUSSION WITH OPPONENT     | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|--------|---|--|--------------------------------------|---|---|------------------------------|--------------------------------------|------------------------------|---|
| 0      | almost no                                       | almost no                              | too few                              | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | relevant arguments/responses | reporter's conduct at the discussion                |
| 1      | some  | some                                   | some                                 | some  | review of sources, cited                  | partly average               | partly clear                         | 0                            | too few   |
| 2      | fair  | fair                                   | fair                                 | not well fitting                              | some own input                            | average                      | average                              | 1                            | some aspects fine                                   |
| 3      | good  | good                                   | well performed, sufficient number    | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | 2                            | many  |
| 4      | detailed demonstrative                          | quite detailed, correct                | + results explained, errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | 3                            | + data/theory convincingly supported                |
| 5      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis  | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated | 4                            | proved deep understanding                           |
| 6      |   |  |                                      |   |   |                              |                                      | 5                            | overall efficient                                   |
| 7      |   |  |                                      |   |   |                              |                                      | 6                            | concise and correct or no questions asked           |
|        |   |  |                                      |   |   |                              |                                      | 7                            | some incorrect, inconclusive or too long            |
|        |   |  |                                      |   |   |                              |                                      | 8                            | deeply incorrect or show deep misconceptions        |

NOTES:

# OPPONENT

Start from 1 and add/subtract

$$1 + 2 + 2 + 3 - \square = 8$$

| QUESTIONS ASKED |   | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS |  |
|-----------------|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|--|--|
| 0               | too few, mostly irrelevant                                | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation | 0  | concise and correct or no questions asked    |
| 1               | relevant, aimed at resolving unclear points in the report | almost nothing                | no or irrelevant          | too few                   | no             | poor            | almost no                  | too few                   | poor                                 | no             | 1  | some incorrect, inconclusive or too long     |
| 2               | + short, apt and clear, well prioritized, all time used   | some main points              | few                       | some                      | some           | reasonable      | few                        | some                      | some aspects fine                    | some           | 2  | deeply incorrect or show deep misconceptions |
|                 |   | main points                   | some                      | some correct              | reasonable     | fair            | some                       | some correct              | good                                 | reasonable     | 3  |  |
|                 |   | all relevant points           | many                      | many correct              | fair           | efficient       | good                       | many correct              | some aspects efficient               | fair           | 4  |  |
|                 |   | practically all points        | practically all           | + improvement suggestions | very good      | + all time used | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |  |  |

NOTES:

# REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 2 + 2 + 2 \pm \square - \square = 8$$

| QUESTIONS ASKED | REVIEW OF REPORT                  | REVIEW OF OPPOSITION | DISCUSSION ANALYSIS   | MISSED POINTS POINTED OUT | ANSWERS TO JURY QUESTIONS |
|-----------------|-----------------------------------|----------------------|-----------------------|---------------------------|---------------------------|
| 0               | report evaluation & understanding | speech evaluation    | discussion evaluation | 0                         | 0                         |
| 1               | poor/wrong                        | poor/wrong           | almost no             | 1                         | 1                         |
| 2               | partial                           | too short/long       | too short/long        | 2                         | 2                         |
| 3               | good                              | informative, apt     | relevant parts        | 3                         | 3                         |
|                 | detailed, complex                 | condensed & accurate | accurate, conclusive  |                           |                           |
|                 |                                   | pros & cons          | correct own opinions  |                           |                           |
|                 |                                   | prioritisation       |                       |                           |                           |

NOTES:



# REPORTER

Start from 1 and add/subtract

$$1 + 3 + 1 - 1 = 4$$



# SCORESHEET

Fight 3 Z, Stage: 1, Problem No. 16

Rep: Russia

Opp: Belarus

Rev: Poland

sign *Maurizio Musso*

Musso, Maurizio

| REPORT | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | DISCUSSION WITH OPPONENT             | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|--------|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--------------------------------------|---|
| 0      | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | relevant arguments/responses         | reporter's conduct at the discussion                |
| 1      | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | too few                              | poor  |
| 2      | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | some                                 | some aspects fine                                   |
| 3      | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | many                                 | good  |
| 4      | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | + data/theory convincingly supported | some aspects efficient                              |
| 5      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated | proved deep understanding            | overall efficient                                   |
| 6      |   |  |                                     |   |   |                              |                                      |                                      |   |
| 7      |   |  |                                     |   |   |                              |                                      |                                      |   |

NOTES:

# OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 2 + 1 - 0 = 5$$

| QUESTIONS ASKED   | OPPOSITION (SPEECH)           | DISCUSSION WITH REPORTER             | ANSWERS TO JURY and REVIEWER'S QUESTIONS |
|---|-------------------------------|--------------------------------------|--|
| 0 too few, mostly irrelevant                                | understanding of presentation | relevant scientific topics           | own opinions presented                   |
| 1 relevant, aimed at resolving unclear points in the report | relevant topics addressed     | own opinions presented               | opponent's conduct of the discussion     |
| 2 + short, apt and clear, well prioritized, all time used   | own opinions presented        | opponent's conduct of the discussion | prioritisation                           |
|   | prioritisation                | prioritisation                       |  |
|   | time management               | time management                      |  |
|   | almost nothing                | almost no                            | too few                                  |
|   | some main points              | few                                  | some                                     |
|   | main points                   | some                                 | some aspects fine                        |
|   | all relevant points           | good                                 | good                                     |
|   | practically all points        | new crucial point(s)                 | + improvement suggestions                |
|   |                               |                                      | overall efficient                        |
|   |                               |                                      | very good                                |

NOTES:

# REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 2 + 2 + 1 - 1 = 6$$

| QUESTIONS ASKED  | REVIEW OF REPORT                  | REVIEW OF OPPOSITION | DISCUSSION ANALYSIS   | MISSED POINTS POINTED OUT | ANSWERS TO JURY QUESTIONS                    |
|--|-----------------------------------|----------------------|-----------------------|---------------------------|--|
| 0 too few, mostly irrelevant   | report evaluation & understanding | speech evaluation    | discussion evaluation | correct own opinions      | concise and correct or no questions asked    |
| 1 relevant, meant to clarify unclear points                          | pros & cons                       | pros & cons          | correct own opinions  | irrelevant                | some incorrect, inconclusive or too long     |
| 2 + suitably allotted to Rep & Opp, most time used                   | prioritisation                    | prioritisation       | correct own opinions  | relevant, constructive    | deeply incorrect or show deep misconceptions |
| 3 + short, apt and clear, well prioritized, time managed efficiently | poor/wrong                        | poor/wrong           | almost no             | irrelevant                |  |
|  | partial                           | too short/long       | too short/long        | none                      |  |
|  | good                              | informative, apt     | relevant parts        | relevant, constructive    |  |
|  | detailed, complex                 | condensed & accurate | accurate, conclusive  |                           |  |

NOTES:

# REPORTER

Start from 1 and add/subtract

$$1 + 5 + 1 - 1 = 6$$



# SCORESHEET

Fight 3 Z, Stage: 1, Problem No. 16

sign *Alexander Pfleger*

Pfleger, Alexander

Rep: Russia

Opp: Belarus

Rev: Poland

| REPORT | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | DISCUSSION WITH OPPONENT             | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|--------|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--------------------------------------|---|
| 0      | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | relevant arguments/responses         | reporter's conduct at the discussion                |
| 1      | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | too few                              | poor  |
| 2      | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | some                                 | some aspects fine                                   |
| 3      | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | many                                 | good  |
| 4      | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | + data/theory convincingly supported | some aspects efficient                              |
| 5      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated | proved deep understanding            | overall efficient                                   |

NOTES:

# OPPONENT

Start from 1 and add/subtract

$$1 + 4.5 + 2.75 + 2 - 4.5 = 5$$

| QUESTIONS ASKED   | OPPOSITION (SPEECH)           | DISCUSSION WITH REPORTER             | ANSWERS TO JURY and REVIEWER'S QUESTIONS |
|---|-------------------------------|--------------------------------------|--|
| 0 too few, mostly irrelevant                                | understanding of presentation | relevant scientific topics           | own opinions presented                   |
| 1 relevant, aimed at resolving unclear points in the report | relevant topics addressed     | opponent's conduct of the discussion | prioritisation                           |
| 2 + short, apt and clear, well prioritized, all time used   | own opinions presented        | time management                      |  |
|   | 0 almost nothing              | 0 almost no                          | 0 too few                                |
|   | 1 some main points            | 1 few                                | 1 some                                   |
|   | 2 main points                 | 2 some                               | 2 some correct                           |
|   | 3 all relevant points         | 3 good                               | 3 many correct                           |
|   | 4 practically all points      | 4 new crucial point(s)               | 4 + improvement suggestions              |

NOTES:

# REVIEWER

Start from 1 and add/subtract

$$1 + 1.25 + 2.25 + 2 + 1.5 - 0.5 = 8$$

| QUESTIONS ASKED  | REVIEW OF REPORT                  | REVIEW OF OPPOSITION   | DISCUSSION ANALYSIS    | MISSED POINTS POINTED OUT | ANSWERS TO JURY QUESTIONS                      |
|--|-----------------------------------|------------------------|------------------------|---------------------------|--|
| 0 too few, mostly irrelevant   | report evaluation & understanding | speech evaluation      | discussion evaluation  | correct own opinions      |  |
| 1 relevant, meant to clarify unclear points                          | pros & cons                       | pros & cons            |                        |                           |  |
| 2 + suitably allotted to Rep & Opp, most time used                   | prioritisation                    | prioritisation         |                        |                           |  |
| 3 + short, apt and clear, well prioritized, time managed efficiently | 0 poor/wrong                      | 0 poor/wrong           | 0 almost no            | 0 too few                 | 0 concise and correct or no questions asked    |
|  | 1 partial                         | 1 too short/long       | 1 too short/long       | 1 some                    | 1 some incorrect, inconclusive or too long     |
|  | 2 good                            | 2 informative, apt     | 2 relevant parts       | 2 many                    | 2 deeply incorrect or show deep misconceptions |
|  | 3 detailed, complex               | 3 condensed & accurate | 3 accurate, conclusive | 3 fully adequate          |  |

NOTES:



## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 1, Problem No. BUBLESsign Stepan

Plesch, Martin

Rep: Russia PirzhakinOpp: Belarus StepanRev: Poland Supet

| REPORT  |  |                                     |   |   |                              |                                      | DISCUSSION WITH OPPONENT                      |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS   |
|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|---|--------------------------------------|---|
| phenomenon explanation                              | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses                  | reporter's conduct at the discussion |   |
| 0 — almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | 0 — too few                                   | poor                                 | 0 — concise and correct or no questions asked<br>1 — some incorrect, inconclusive or too long<br>-1 — some incorrect, inconclusive or too long<br>-2 — deeply incorrect or show deep misconceptions |
| 1 — some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | 1 — some                                      | some aspects fine                    |   |
| 2 — fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | 2 — many                                      | good                                 |   |
| 3 — <u>good</u>                                     | <u>good</u>                            | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | 3 — <u>data/theory convincingly supported</u> | some aspects efficient               |   |
| 4 — detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | 4 — proved deep understanding                 | overall efficient                    |   |
| 5 — deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |   |                                      |   |

NOTES:

OSCILLATIONS NOT IMPORTANT ???

## OPPONENT

Start from 1 and add/subtract

$$1 + 0.75 + 1.5 + 1 - \square = 4$$

| QUESTIONS ASKED   |  | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS  |
|---|--|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|---|
|   |  | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |   |
| 0 — too few, mostly irrelevant                                |  | 0 — almost nothing            | no or irrelevant          | too few                   | no             | poor            | 0 — almost no              | too few                   | poor                                 | no             | 0 — concise and correct or no questions asked<br>1 — some incorrect, inconclusive or too long<br>-1 — some incorrect, inconclusive or too long<br>-2 — deeply incorrect or show deep misconceptions |
| 1 — relevant, aimed at resolving unclear points in the report |  | 1 — some main points          | few                       | some                      | some           | reasonable      | 1 — few                    | some                      | some aspects fine                    | some           |   |
| 2 — + short, apt and clear, well prioritized, all time used   |  | 2 — main points               | some                      | some correct              | reasonable     | fair            | 2 — some                   | some correct              | good                                 | reasonable     |   |
|   |  | 3 — all relevant points       | many                      | many correct              | fair           | efficient       | 3 — good                   | many correct              | some aspects efficient               | fair           |   |
|   |  | 4 — practically all points    | practically all           | + improvement suggestions | very good      | all time used   | 4 — new crucial point(s)   | + improvement suggestions | overall efficient                    | very good      |   |

NOTES:

НІСЛІДСТВИМ  
K ТЕОРИ  
S VACŠIONA POINTU  
NEPOCHOPIL FITY  
EXTREMELY RUDE

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1 + 0.75 + 1 - \square - \square = 5$$

| QUESTIONS ASKED  |  | REVIEW OF REPORT                  |                    |                | REVIEW OF OPPOSITION     |                    |                | DISCUSSION ANALYSIS      |                      | MISSED POINTS POINTED OUT  | ANSWERS TO JURY QUESTIONS   |
|--|--|-----------------------------------|--------------------|----------------|--------------------------|--------------------|----------------|--------------------------|----------------------|----------------------------|---|
|  |  | report evaluation & understanding | pros & cons        | prioritisation | speech evaluation        | pros & cons        | prioritisation | discussion evaluation    | correct own opinions |                            |   |
| 0 — too few, mostly irrelevant   |  | 0 — poor/wrong                    | irrelevant         | no             | 0 — poor/wrong           | irrelevant         | no             | 0 — almost no            | too few              | -1 — irrelevant            | 0 — concise and correct or no questions asked<br>1 — some incorrect, inconclusive or too long<br>-1 — some incorrect, inconclusive or too long<br>-2 — deeply incorrect or show deep misconceptions |
| 1 — + suitably allotted to Rep & Opp, most time used                   |  | 1 — partial                       | partially relevant | some           | 1 — too short/long       | partially relevant | some           | 1 — too short/long       | some                 | 0 — none                   |   |
| 2 — + short, apt and clear, well prioritized, time managed efficiently |  | 2 — good                          | mostly adequate    | reasonable     | 2 — informative, apt     | mostly adequate    | reasonable     | 2 — relevant parts       | many                 | 1 — relevant, constructive |   |
|  |  | 3 — detailed, complex             | fully adequate     | good           | 3 — condensed & accurate | fully adequate     | good           | 3 — accurate, conclusive | fully adequate       |                            |   |
|  |  |                                   |                    |                |                          |                    |                |                          |                      |                            |   |

NOTES:

GOOD THEORY?

# REPORTER

Start from 1 and add/subtract

$$1 + 2.5 + 1.5 - \boxed{\phantom{00}} = \boxed{5}$$



# SCORESHEET

Fight 3 Z, Stage: 1, Problem No. 16

sign *[Signature]*

Siess, Josef

Rep: Russia

Opp: Belarus

Rev: Poland

| REPORT  |  |   |   |   |                                  |  | DISCUSSION WITH OPPONENT                 |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS   |
|---|--|---|---|---|----------------------------------|--|--|--------------------------------------|---|
| phenomenon explanation                              | theory/model                               | relevant experiments                    | comparison between theory and experiment          | own contribution                              | task fulfilment                  | science communication                    | relevant arguments/responses             | reporter's conduct at the discussion |   |
| 0 — almost no                                       | 0 — almost no                              | 0 — too few                             | 0 — no/ almost no                                 | 0 — others' data, incorrectly cited           | 0 — misunderstood                | 0 — unclear, chaotic                     | 0 — too few                              | 0 — poor                             | 0 — concise and correct or no questions asked<br>-1 — some incorrect, inconclusive or too long<br>-2 — deeply incorrect or show deep misconceptions |
| 1 — some  | 1 — some                                   | 1 — some                                | 1 — some  | 1 — review of sources, cited                  | 1 — partly                       | 1 — partly clear                         | 1 — some                                 | 1 — some aspects fine                |   |
| 2 — fair  | 2 — fair                                   | 2 — fair                                | 2 — not well fitting                              | 2 — some own input                            | 2 — average                      | 2 — average                              | 2 — many                                 | 2 — good                             |   |
| 3 — good  | 3 — good                                   | 3 — well performed, sufficient number   | 3 — deviations qualitatively analysed             | 3 — + some interesting results                | 3 — some aspects above average   | 3 — some parts well done                 | 3 — + data/theory convincingly supported | 3 — some aspects efficient           |   |
| 4 — detailed demonstrative                          | 4 — quite detailed, correct                | 4 — + results explained errors analysed | 4 — + theory limits explained, conclusive         | 4 — considerable experimental or theoretical  | 4 — interesting solution         | 4 — overall clear, demonstrative         | 4 — proved deep understanding            | 4 — overall efficient                |   |
| 5 — deep and comprehensible, shows physical insight | 5 — detailed, complex, completely testable | 5 — + reproducible, convincing analysis | 5 — well fitting, deviations analysed, conclusive | 5 — considerable experimental and theoretical | 5 — greater extent than expected | 5 — + complex concepts well communicated |  |                                      |   |

## NOTES:

parameters: Temp. diff fluids/liquids, viscosity,

how bubble size determining!  
+ experimental explanations.

# OPPONENT

Start from 1 and add/subtract

$$1 + 1.0 + 1.75 + 1.5 - 0.5 = \boxed{5}$$

| QUESTIONS ASKED   |     | OPPOSITION (SPEECH)           |                           |                             |                |                     | DISCUSSION WITH REPORTER   |                             |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS  |
|---|-----|-------------------------------|---------------------------|-----------------------------|----------------|---------------------|----------------------------|-----------------------------|--------------------------------------|----------------|---|
|   |     | understanding of presentation | relevant topics addressed | own opinions presented      | prioritisation | time management     | relevant scientific topics | own opinions presented      | opponent's conduct of the discussion | prioritisation |   |
| 0 — too few, mostly irrelevant                                | 0 — | 0 — almost nothing            | 0 — no or irrelevant      | 0 — too few                 | 0 — no         | 0 — poor            | 0 — almost no              | 0 — too few                 | 0 — poor                             | 0 — no         | 0 — concise and correct or no questions asked<br>-1 — some incorrect, inconclusive or too long<br>-2 — deeply incorrect or show deep misconceptions |
| 1 — relevant, aimed at resolving unclear points in the report | 1 — | 1 — some main points          | 1 — few                   | 1 — some                    | 1 — some       | 1 — reasonable      | 1 — few                    | 1 — some                    | 1 — some aspects fine                | 1 — some       |   |
| 2 — + short, apt and clear, well prioritized, all time used   | 2 — | 2 — main points               | 2 — some                  | 2 — some correct            | 2 — reasonable | 2 — fair            | 2 — some                   | 2 — some correct            | 2 — good                             | 2 — reasonable |   |
|   | 3 — | 3 — all relevant points       | 3 — many                  | 3 — many correct            | 3 — fair       | 3 — efficient       | 3 — good                   | 3 — many correct            | 3 — some aspects efficient           | 3 — fair       |   |
|   | 4 — | 4 — practically all points    | 4 — practically all       | 4 — improvement suggestions | 4 — very good  | 4 — + all time used | 4 — new crucial point(s)   | 4 — improvement suggestions | 4 — overall efficient                | 4 — very good  |   |

## NOTES:

excl. Summary! but... theory, discussion! shape, acceleration, air, videos,

# REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1.5 + 1.5 + 1 \pm \boxed{0} - \boxed{\phantom{00}} = \boxed{6}$$

| QUESTIONS ASKED  |     | REVIEW OF REPORT                  |                        |                | REVIEW OF OPPOSITION     |                        |                | DISCUSSION ANALYSIS      |                      | MISSED POINTS POINTED OUT   | ANSWERS TO JURY QUESTIONS   |
|--|-----|-----------------------------------|------------------------|----------------|--------------------------|------------------------|----------------|--------------------------|----------------------|---|---|
|  |     | report evaluation & understanding | pros & cons            | prioritisation | speech evaluation        | pros & cons            | prioritisation | discussion evaluation    | correct own opinions |   |   |
| 0 — too few, mostly irrelevant   | 0 — | 0 — poor/wrong                    | 0 — irrelevant         | 0 — no         | 0 — poor/wrong           | 0 — irrelevant         | 0 — no         | 0 — almost no            | 0 — too few          | -1 — irrelevant<br>0 — none<br>1 — relevant, constructive<br>-2 — | 0 — concise and correct or no questions asked<br>-1 — some incorrect, inconclusive or too long<br>-2 — deeply incorrect or show deep misconceptions |
| 1 — + suitably allotted to Rep & Opp, most time used                   | 1 — | 1 — partial                       | 1 — partially relevant | 1 — some       | 1 — too short/long       | 1 — partially relevant | 1 — some       | 1 — too short/long       | 1 — some             |   |   |
| 2 — + short, apt and clear, well prioritized, time managed efficiently | 2 — | 2 — good                          | 2 — mostly adequate    | 2 — reasonable | 2 — informative, apt     | 2 — mostly adequate    | 2 — reasonable | 2 — relevant parts       | 2 — many             |   |   |
|  | 3 — | 3 — detailed, complex             | 3 — fully adequate     | 3 — good       | 3 — condensed & accurate | 3 — fully adequate     | 3 — good       | 3 — accurate, conclusive | 3 — fully adequate   |   |   |
|  | 4 — |                                   |                        |                |                          |                        |                |                          |                      |   |   |

## NOTES:

theory

good summary.

no questions!



## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 2, Problem No. 17

signature

Lindner, Thomas

Rep: Belarus

Opp: Poland

Rev: Slovenia

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfillment             | science communication                |
|---|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         |
| 2 | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              |
| 3 |   |  |                                     | deviations qualitatively analysed             |   |                              |                                      |
| 4 | X good  | good                                   | X well performed, sufficient number | X some interesting results                    | considerable experimental or theoretical  | X some aspects above average | X some parts well done               |
| 5 | detailed demonstrative                          | X quite detailed, correct              | + results explained errors analysed | X + theory limits explained, conclusive       | considerable experimental and theoretical | interesting solution         | overall clear, demonstrative         |
| 6 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | X many                               | X good                               |
| 3 | + data/theory convincingly supported | some aspects efficient               |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 — concise and correct or no questions asked
- 1 — some incorrect, inconclusive or too long
- 2 — deeply incorrect or show deep misconceptions

## NOTES:

unfortunate to limit to propagation velocity

## OPPONENT

Start from 1 and add/subtract

$$1 + 0.5 + 2.5 + 2 - 0.5 = 6$$

## QUESTIONS ASKED

- 0 X too few, mostly irrelevant
- 1 — relevant, aimed at resolving unclear points in the report
- 2 — + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no or irrelevant          | too few                   | no             | poor            |
| 1 | X some main points            | few                       | some                      | some           | reasonable      |
| 2 | main points                   | X some                    | X some correct            | X reasonable   | fair            |
| 3 | all relevant points           | many                      | many correct              | fair           | X efficient     |
| 4 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | some aspects fine                    | X some         |
| 2 | X some                     | X some correct            | X good                               | reasonable     |
| 3 | good                       | many correct              | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 — concise and correct or no questions asked
- 1 X — some incorrect, inconclusive or too long
- 2 — deeply incorrect or show deep misconceptions

## NOTES:

also probe into theory in questions (and speech)

## REVIEWER

Start from 1 and add/subtract

$$1 + 0.5 + 1.5 + 1 + 1 + 0 - 0 = 5$$

## QUESTIONS ASKED

- 0 — too few, mostly irrelevant
- X — relevant, meant to clarify unclear points
- 1 — + suitably allotted to Rep & Opp, most time used
- 2 — + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | X good                            | mostly adequate    | X reasonable   |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | X too short/long     | partially relevant | X some         |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | too short/long        | some                 |
| 2 | X relevant parts      | X many               |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 — irrelevant
- 0 — none
- 1 — relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 — concise and correct or no questions asked
- 1 — some incorrect, inconclusive or too long
- 2 — deeply incorrect or show deep misconceptions

## NOTES:

good to clarify height v. speed, probe into theory (not only phenomenon)

**REPORTER** Start from 1 and add/subtract

1 + 4 + 2 -  =



**SCORESHEET**

Fight 3 Z, Stage: 2, Problem No. \_\_\_\_\_

Rep: Belarus

*Kloled*

Opp: Poland

sign

*Mathelitsch, Leopold*

Mathelitsch, Leopold

Rev: Slovenia

*truly*

| REPORT |   |  |                                     |   |   |                              |                                      | DISCUSSION WITH OPPONENT             |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |  |
|--------|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---|--|
|        | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses         | reporter's conduct at the discussion |   |  |
| 0      | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |                                      |                                      |   |  |
| 1      | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | too few                              | poor                                 | 0   | concise and correct or no questions asked    |
| 2      | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | some                                 | some aspects fine                    |   |  |
| 3      | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | many                                 | good                                 | 1   | some incorrect, inconclusive or too long     |
| 4      | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | + data/theory convincingly supported | some aspects efficient               | 2   | deeply incorrect or show deep misconceptions |
| 5      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated | proved deep understanding            | overall efficient                    | 3   |  |

NOTES:

**OPPONENT** Start from 1 and add/subtract

1 + 1 + 2 + 2 -  =

| QUESTIONS ASKED |   | OPPOSITION (SPEECH)           |                           |                        |                           |                 | DISCUSSION WITH REPORTER   |                        |                                      |                           | ANSWERS TO JURY and REVIEWER'S QUESTIONS |   |  |
|-----------------|---|-------------------------------|---------------------------|------------------------|---------------------------|-----------------|----------------------------|------------------------|--------------------------------------|---------------------------|--|---|--|
| 0               | too few, mostly irrelevant                                | understanding of presentation | relevant topics addressed | own opinions presented | prioritisation            | time management | relevant scientific topics | own opinions presented | opponent's conduct of the discussion | prioritisation            | 0  | concise and correct or no questions asked |  |
| 1               | relevant, aimed at resolving unclear points in the report | 0                             | almost nothing            | no or irrelevant       | too few                   | no              | poor                       | almost no              | too few                              | poor                      | no                                       | no questions asked                        |  |
|                 | + short, apt and clear, well prioritized, all time used   | 1                             | some main points          | few                    | some                      | some            | reasonable                 | 1                      | few                                  | some                      | some aspects fine                        | some                                      | some incorrect, inconclusive or too long     |
|                 |   | 2                             | main points               | some                   | some correct              | reasonable      | fair                       | 2                      | some                                 | some correct              | good                                     | reasonable                                | deeply incorrect or show deep misconceptions |
|                 |   | 3                             | all relevant points       | many                   | many correct              | fair            | efficient                  | 3                      | good                                 | many correct              | some aspects efficient                   | fair                                      |  |
|                 |   | 4                             | practically all points    | practically all        | + improvement suggestions | very good       | + all time used            | 4                      | new crucial point(s)                 | + improvement suggestions | overall efficient                        | very good                                 |  |
| NOTES:          |   |                               |                           |                        |                           |                 |                            |                        |                                      |                           |  |   |  |

NOTES:

**REVIEWER** Start from 1 and add/subtract

1 + 1 + 1 + 1 + 1 ±  -  =

| QUESTIONS ASKED  | REVIEW OF REPORT                  |                    |                | REVIEW OF OPPOSITION     |                    |                | DISCUSSION ANALYSIS      |                      | MISSED POINTS POINTED OUT  | ANSWERS TO JURY QUESTIONS                         |
|--|-----------------------------------|--------------------|----------------|--------------------------|--------------------|----------------|--------------------------|----------------------|----------------------------|---|
|  | report evaluation & understanding | pros & cons        | prioritisation | speech evaluation        | pros & cons        | prioritisation | discussion evaluation    | correct own opinions |                            |   |
| 0 — too few, mostly irrelevant   | 0 — poor/wrong                    | irrelevant         | no             | 0 — poor/wrong           | irrelevant         | no             | 0 — almost no            | too few              | -1 — irrelevant            | 0 — concise and correct or no questions asked     |
| — relevant, meant to clarify unclear points                            | 1 — partial                       | partially relevant | some           | 1 — too short/long       | partially relevant | some           | 1 — too short/long       | some                 | 0 — none                   | — some incorrect, inconclusive or too long        |
| 1 — + suitably allotted to Rep & Opp, most time used                   | 2 — good                          | mostly adequate    | reasonable     | 2 — informative, apt     | mostly adequate    | reasonable     | 2 — relevant parts       | many                 | 1 — relevant, constructive | -1 — deeply incorrect or show deep misconceptions |
| 2 — + short, apt and clear, well prioritized, time managed efficiently | 3 — detailed, complex             | fully adequate     | good           | 3 — condensed & accurate | fully adequate     | good           | 2 — accurate, conclusive | fully adequate       |                            |   |

NOTES:



# REPORTER

Start from 1 and add/subtract

$$1 + 4 + 2 - 0 = 7$$



# SCORESHEET

Fight 3 Z, Stage: 2, Problem No. 17

Rep: Belarus

Opp: Poland

Rev: Slovenia

Musso, Maurizio

| REPORT |   |  |                                     |   |   |                              | DISCUSSION WITH OPPONENT             |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |   |
|--------|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--------------------------------------|---|---|
|        | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses         |   | reporter's conduct at the discussion              |
| 0      | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | too few                              | poor  | 0 — concise and correct or no questions asked     |
| 1      | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | some                                 | some aspects fine                                   |   |
| 2      | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | many                                 | good  | -1 — some incorrect, inconclusive or too long     |
| 3      | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | + data/theory convincingly supported | some aspects efficient                              |   |
| 4      | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | proved deep understanding            | overall efficient                                   | -2 — deeply incorrect or show deep misconceptions |
| 5      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |                                      |   |   |

NOTES:

# OPPONENT

Start from 1 and add/subtract

$$1 + 2 + 2 + 2 - 0 = 7$$

| QUESTIONS ASKED |   | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS          |
|-----------------|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|---|
|                 |   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |   |
| 0               | too few, mostly irrelevant                                | almost nothing                | no or irrelevant          | too few                   | no             | poor            | almost no                  | too few                   | poor                                 | no             | 0 — concise and correct or no questions asked     |
| 1               | relevant, aimed at resolving unclear points in the report | some main points              | few                       | some                      | some           | reasonable      | few                        | some                      | some aspects fine                    | some           |   |
| 2               | + short, apt and clear, well prioritized, all time used   | main points                   | some                      | some correct              | reasonable     | fair            | some                       | some correct              | good                                 | reasonable     | -1 — some incorrect, inconclusive or too long     |
| 3               |   | all relevant points           | many                      | many correct              | fair           | efficient       | good                       | many correct              | some aspects efficient               | fair           |   |
| 4               |   | practically all points        | practically all           | + improvement suggestions | very good      | + all time used | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      | -2 — deeply incorrect or show deep misconceptions |

NOTES:

# REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 2 + 2 + 1 - 0 - 0 = 7$$

| QUESTIONS ASKED |  | REVIEW OF REPORT                  |                    |                | REVIEW OF OPPOSITION |                    |                | DISCUSSION ANALYSIS   |                      | MISSED POINTS POINTED OUT                         | ANSWERS TO JURY QUESTIONS                     |
|-----------------|--|-----------------------------------|--------------------|----------------|----------------------|--------------------|----------------|-----------------------|----------------------|---|---|
|                 |  | report evaluation & understanding | pros & cons        | prioritisation | speech evaluation    | pros & cons        | prioritisation | discussion evaluation | correct own opinions |   |   |
| 0               | too few, mostly irrelevant   | poor/wrong                        | irrelevant         | no             | poor/wrong           | irrelevant         | no             | almost no             | too few              | -1 — irrelevant                                   | 0 — concise and correct or no questions asked |
| 1               | relevant, meant to clarify unclear points                          | partial                           | partially relevant | some           | too short/long       | partially relevant | some           | too short/long        | some                 | 0 — none  |   |
| 2               | + suitably allotted to Rep & Opp, most time used                   | good                              | mostly adequate    | reasonable     | informative, apt     | mostly adequate    | reasonable     | relevant parts        | many                 | -1 — relevant, constructive                       | -1 — some incorrect, inconclusive or too long |
| 3               | + short, apt and clear, well prioritized, time managed efficiently | detailed, complex                 | fully adequate     | good           | condensed & accurate | fully adequate     | good           | accurate, conclusive  | fully adequate       | -2 — deeply incorrect or show deep misconceptions |   |

NOTES:

## REPORTER

Start from 1 and add/subtract

$$1 + 4.75 + 1.25 - 1 = 6$$



## SCORESHEET

Fight 3 Z, Stage: 2, Problem No. 17

 sign *Heidi. Pleg*  
 Rev: Slovenia

Pfleger, Alexander

Rep: Belarus

Opp: Poland

| REPORT  |  |  |   |   |                                  |  | DISCUSSION WITH OPPONENT                 |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|---|--|--|---|---|----------------------------------|--|--|--------------------------------------|---|
| phenomenon explanation                              | theory/model                               | relevant experiments                     | comparison between theory and experiment          | own contribution                              | task fulfilment                  | science communication                    | relevant arguments/responses             | reporter's conduct at the discussion |   |
| 0 — almost no                                       | 0 — almost no                              | 0 — too few                              | 0 — no/ almost no                                 | 0 — others' data, incorrectly cited           | 0 — misunderstood                | 0 — unclear, chaotic                     | 0 — too few                              | 0 — poor                             | 0 — concise and correct or no questions asked       |
| 1 — some  | 1 — some                                   | 1 — some                                 | 1 — some  | 1 — review of sources, cited                  | 1 — partly                       | 1 — partly clear                         | 1 — some                                 | 1 — some aspects fine                | 1 — some incorrect, inconclusive or too long        |
| 2 — fair  | 2 — fair                                   | 2 — fair                                 | 2 — not well fitting                              | 2 — some own input                            | 2 — average                      | 2 — average                              | 2 — many                                 | 2 — good                             | 2 — deeply incorrect or show deep misconceptions    |
| 3 — good  | 3 — good                                   | 3 — well performed, sufficient number    | 3 — deviations qualitatively analysed             | 3 — + some interesting results                | 3 — some aspects above average   | 3 — some parts well done                 | 3 — + data/theory convincingly supported | 3 — some aspects efficient           |   |
| 4 — detailed demonstrative                          | 4 — quite detailed, correct                | 4 — + results explained, errors analysed | 4 — + theory limits explained, conclusive         | 4 — considerable experimental or theoretical  | 4 — interesting solution         | 4 — overall clear, demonstrative         |  |                                      |   |
| 5 — deep and comprehensible, shows physical insight | 5 — detailed, complex, completely testable | 5 — + reproducible, convincing analysis  | 5 — well fitting, deviations analysed, conclusive | 5 — considerable experimental and theoretical | 5 — greater extent than expected | 5 — + complex concepts well communicated | 5 — proved deep understanding            | 5 — overall efficient                |   |

NOTES:

## OPPONENT

Start from 1 and add/subtract

$$1 + 1.25 + 2 + 2 - 0.75 = 6$$

| QUESTIONS ASKED   |     | OPPOSITION (SPEECH)           |                           |                               |                |                     | DISCUSSION WITH REPORTER   |                               |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS         |
|---|-----|-------------------------------|---------------------------|-------------------------------|----------------|---------------------|----------------------------|-------------------------------|--------------------------------------|----------------|--|
|   |     | understanding of presentation | relevant topics addressed | own opinions presented        | prioritisation | time management     | relevant scientific topics | own opinions presented        | opponent's conduct of the discussion | prioritisation |  |
| 0 — too few, mostly irrelevant                                | 0 — | 0 — almost nothing            | 0 — no or irrelevant      | 0 — too few                   | 0 — no         | 0 — poor            | 0 — almost no              | 0 — too few                   | 0 — poor                             | 0 — no         | 0 — concise and correct or no questions asked    |
| 1 — relevant, aimed at resolving unclear points in the report | 1 — | 1 — some main points          | 1 — few                   | 1 — some                      | 1 — some       | 1 — reasonable      | 1 — few                    | 1 — some                      | 1 — some aspects fine                | 1 — some       | 1 — some incorrect, inconclusive or too long     |
| 2 — + short, apt and clear, well prioritized, all time used   | 2 — | 2 — main points               | 2 — some                  | 2 — some correct              | 2 — reasonable | 2 — fair            | 2 — some                   | 2 — some correct              | 2 — good                             | 2 — reasonable | 2 — deeply incorrect or show deep misconceptions |
|   | 3 — | 3 — all relevant points       | 3 — many                  | 3 — many correct              | 3 — fair       | 3 — efficient       | 3 — good                   | 3 — many correct              | 3 — some aspects efficient           | 3 — fair       |  |
|   | 4 — | 4 — practically all points    | 4 — practically all       | 4 — + improvement suggestions | 4 — very good  | 4 — + all time used | 4 — new crucial point(s)   | 4 — + improvement suggestions | 4 — overall efficient                | 4 — very good  |  |

NOTES:

## REVIEWER

Start from 1 and add/subtract

$$1 + 0.75 + 2 + 2 + 1 + 0.75 - 0 = 7$$

| QUESTIONS ASKED  |     | REVIEW OF REPORT                  |                        |                | REVIEW OF OPPOSITION     |                        |                | DISCUSSION ANALYSIS      |                      | MISSED POINTS POINTED OUT  | ANSWERS TO JURY QUESTIONS                        |
|--|-----|-----------------------------------|------------------------|----------------|--------------------------|------------------------|----------------|--------------------------|----------------------|----------------------------|--|
|  |     | report evaluation & understanding | pros & cons            | prioritisation | speech evaluation        | pros & cons            | prioritisation | discussion evaluation    | correct own opinions |                            |  |
| 0 — too few, mostly irrelevant   | 0 — | 0 — poor/wrong                    | 0 — irrelevant         | 0 — no         | 0 — poor/wrong           | 0 — irrelevant         | 0 — no         | 0 — almost no            | 0 — too few          | 0 — irrelevant             | 0 — concise and correct or no questions asked    |
| 1 — relevant, meant to clarify unclear points                          | 1 — | 1 — partial                       | 1 — partially relevant | 1 — some       | 1 — too short/long       | 1 — partially relevant | 1 — some       | 1 — too short/long       | 1 — some             | 1 — none                   | 1 — some incorrect, inconclusive or too long     |
| 2 — + suitably allotted to Rep & Opp, most time used                   | 2 — | 2 — good                          | 2 — mostly adequate    | 2 — reasonable | 2 — informative, apt     | 2 — mostly adequate    | 2 — reasonable | 2 — relevant parts       | 2 — many             | 2 — relevant, constructive | 2 — deeply incorrect or show deep misconceptions |
| 3 — + short, apt and clear, well prioritized, time managed efficiently | 3 — | 3 — detailed, complex             | 3 — fully adequate     | 3 — good       | 3 — condensed & accurate | 3 — fully adequate     | 3 — good       | 3 — accurate, conclusive | 3 — fully adequate   |                            |  |

NOTES:



# REPORTER

Start from 1 and add/subtract

$$1 + 3.5 + 2.8 - 1 = 6$$



# SCORESHEET

Fight 3 Z, Stage: 2, Problem No. \_\_\_\_\_

Rep: Belarus

khodod

Opp: Poland

sign *[Signature]*  
Pelnial

Rev: Slovenia

Manca

Plesch, Martin

Strah

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                |
|---|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         |
| 2 | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              |
| 3 | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 |
| 4 | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |
| 5 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | many                                 | good                                 |
| 3 | + data/theory convincingly supported | some aspects efficient               |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 — concise and correct or no questions asked  
1 — some incorrect, inconclusive or too long  
2 — deeply incorrect or show deep misconceptions

NOTES:

## OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 1.5 + 1.5 - \square = 5$$

## QUESTIONS ASKED

- 0 — too few, mostly irrelevant  
1 — relevant, aimed at resolving unclear points in the report  
2 — + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no or irrelevant          | too few                   | no             | poor            |
| 1 | some main points              | few                       | some                      | some           | reasonable      |
| 2 | main points                   | some                      | some correct              | reasonable     | fair            |
| 3 | all relevant points           | many                      | many correct              | fair           | efficient       |
| 4 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | some aspects fine                    | some           |
| 2 | some                       | some correct              | good                                 | reasonable     |
| 3 | good                       | many correct              | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 — concise and correct or no questions asked  
1 — some incorrect, inconclusive or too long  
2 — deeply incorrect or show deep misconceptions

NOTES:

kratsic

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 3.5 + 1 + 1.5 - \square - \square = 6$$

## QUESTIONS ASKED

- 0 — too few, mostly irrelevant  
1 — relevant, meant to clarify unclear points  
2 — + suitably allotted to Rep & Opp, most time used  
3 — + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | good                              | mostly adequate    | reasonable     |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | too short/long       | partially relevant | some           |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | too short/long        | some                 |
| 2 | relevant parts        | many                 |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 — irrelevant  
0 — none  
1 — relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 — concise and correct or no questions asked  
1 — some incorrect, inconclusive or too long  
2 — deeply incorrect or show deep misconceptions

NOTES:

## REPORTER

Start from 1 and add/subtract

$$1 + 3.5 + 1.5 - \boxed{\phantom{00}} = \boxed{6}$$



## SCORESHEET

Fight 3 Z, Stage: 2, Problem No. \_\_\_\_\_

sign \_\_\_\_\_

Rep: Belarus

Opp: Poland

Rev: Slovenia

Siess, Josef

| REPORT  |  |   |   |   |                                  |  | DISCUSSION WITH OPPONENT                 |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS   |
|---|--|---|---|---|----------------------------------|--|--|--------------------------------------|---|
| phenomenon explanation                              | theory/model                               | relevant experiments                    | comparison between theory and experiment          | own contribution                              | task fulfilment                  | science communication                    | relevant arguments/responses             | reporter's conduct at the discussion |   |
| 0 — almost no                                       | 0 — almost no                              | 0 — too few                             | 0 — no/ almost no                                 | 0 — others' data, incorrectly cited           | 0 — misunderstood                | 0 — unclear, chaotic                     | 0 — too few                              | 0 — poor                             | 0 — <input checked="" type="checkbox"/> concise and correct or no questions asked<br>1 — some incorrect, inconclusive or too long<br>2 — deeply incorrect or show deep misconceptions |
| 1 — some  | 1 — some                                   | 1 — some                                | 1 — some  | 1 — review of sources, cited                  | 1 — partly                       | 1 — partly clear                         | 1 — some                                 | 1 — some aspects fine                |   |
| 2 — fair  | 2 — fair                                   | 2 — fair                                | 2 — not well fitting                              | 2 — some own input                            | 2 — average                      | 2 — average                              | 2 — many                                 | 2 — good                             |   |
| 3 — good  | 3 — good                                   | 3 — well performed, sufficient number   | 3 — deviations qualitatively analysed             | 3 — some interesting results                  | 3 — some aspects above average   | 3 — some parts well done                 | 3 — + data/theory convincingly supported | 3 — some aspects efficient           |   |
| 4 — detailed demonstrative                          | 4 — quite detailed, correct                | 4 — + results explained errors analysed | 4 — + theory limits explained, conclusive         | 4 — considerable experimental or theoretical  | 4 — interesting solution         | 4 — overall clear, demonstrative         | 4 — proved deep understanding            | 4 — overall efficient                |   |
| 5 — deep and comprehensible, shows physical insight | 5 — detailed, complex, completely testable | 5 — + reproducible, convincing analysis | 5 — well fitting, deviations analysed, conclusive | 5 — considerable experimental and theoretical | 5 — greater extent than expected | 5 — + complex concepts well communicated |  |                                      |   |

NOTES:

shape of cobra? angle, length, space ~ rod height? energy?

## OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 1.5 + 2.5 - \boxed{\phantom{00}} = \boxed{6}$$

| QUESTIONS ASKED   |   | OPPOSITION (SPEECH)           |                           |                               |                |                     | DISCUSSION WITH REPORTER   |                               |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS  |
|---|---|-------------------------------|---------------------------|-------------------------------|----------------|---------------------|----------------------------|-------------------------------|--------------------------------------|----------------|---|
|   |   | understanding of presentation | relevant topics addressed | own opinions presented        | prioritisation | time management     | relevant scientific topics | own opinions presented        | opponent's conduct of the discussion | prioritisation |   |
| 0 — too few, mostly irrelevant                                | 0 —                                     | 0 — almost nothing            | 0 — no or irrelevant      | 0 — too few                   | 0 — no         | 0 — poor            | 0 — almost no              | 0 — too few                   | 0 — poor                             | 0 — no         | 0 — <input checked="" type="checkbox"/> concise and correct or no questions asked<br>1 — some incorrect, inconclusive or too long<br>2 — deeply incorrect or show deep misconceptions |
| 1 — relevant, aimed at resolving unclear points in the report | 1 — <input checked="" type="checkbox"/> | 1 — some main points          | 1 — few                   | 1 — some                      | 1 — some       | 1 — reasonable      | 1 — few                    | 1 — some                      | 1 — some aspects fine                | 1 — some       |   |
| 2 — + short, apt and clear, well prioritized, all time used   | 2 —                                     | 2 — main points               | 2 — some                  | 2 — some correct              | 2 — reasonable | 2 — fair            | 2 — some                   | 2 — some correct              | 2 — good                             | 2 — reasonable |   |
|   |   | 3 — all relevant points       | 3 — many                  | 3 — many correct              | 3 — fair       | 3 — efficient       | 3 — good                   | 3 — many correct              | 3 — some aspects efficient           | 3 — fair       |   |
|   |   | 4 — practically all points    | 4 — practically all       | 4 — + improvement suggestions | 4 — very good  | 4 — + all time used | 4 — new crucial point(s)   | 4 — + improvement suggestions | 4 — overall efficient                | 4 — very good  |   |

NOTES:

material: wood

friction,

materials

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1.5 + 2 + 7 \pm \boxed{\phantom{00}} - \boxed{\phantom{00}} = \boxed{6}$$

| QUESTIONS ASKED  |   | REVIEW OF REPORT                  |                        |                | REVIEW OF OPPOSITION     |                        |                | DISCUSSION ANALYSIS      |                      | MISSED POINTS POINTED OUT  | ANSWERS TO JURY QUESTIONS   |
|--|---|-----------------------------------|------------------------|----------------|--------------------------|------------------------|----------------|--------------------------|----------------------|----------------------------|---|
|  |   | report evaluation & understanding | pros & cons            | prioritisation | speech evaluation        | pros & cons            | prioritisation | discussion evaluation    | correct own opinions |                            |   |
| 0 — too few, mostly irrelevant   | 0 —                                     | 0 — poor/wrong                    | 0 — irrelevant         | 0 — no         | 0 — poor/wrong           | 0 — irrelevant         | 0 — no         | 0 — almost no            | 0 — too few          | 0 — irrelevant             | 0 — <input checked="" type="checkbox"/> concise and correct or no questions asked<br>1 — some incorrect, inconclusive or too long<br>2 — deeply incorrect or show deep misconceptions |
| 1 — + suitably allotted to Rep & Opp, most time used                   | 1 — <input checked="" type="checkbox"/> | 1 — partial                       | 1 — partially relevant | 1 — some       | 1 — too short/long       | 1 — partially relevant | 1 — some       | 1 — too short/long       | 1 — some             | 1 — none                   |   |
| 2 — + short, apt and clear, well prioritized, time managed efficiently | 2 —                                     | 2 — good                          | 2 — mostly adequate    | 2 — reasonable | 2 — informative, apt     | 2 — mostly adequate    | 2 — reasonable | 2 — relevant parts       | 2 — many             | 2 — relevant, constructive |   |
|  |   | 3 — detailed, complex             | 3 — fully adequate     | 3 — good       | 3 — condensed & accurate | 3 — fully adequate     | 3 — good       | 3 — accurate, conclusive | 3 — fully adequate   |                            |   |
|  |   |                                   |                        |                |                          |                        |                |                          |                      |                            |   |

NOTES:

young

linear fit?

demonstration



## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 3, Problem No. 15

sig

Lindner, Thomas

Lindner, Thomas

Rep: Poland

Opp: Slovenia

Rev: Russia

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                |
|---|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         |
| 2 | fair  | X fair                                 | X fair                              | not well fitting                              | some own input                            | average                      | average                              |
| 3 | X good  | good                                   | well performed, sufficient number   | X deviations qualitatively analysed           | X + some interesting results              | X some aspects above average | X some parts well done               |
| 4 | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |
| 5 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | X many                               | good                                 |
| 3 | + data/theory convincingly supported | X some aspects efficient             |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked  
 0 X --- some incorrect, inconclusive or too long  
 -1 --- deeply incorrect or show deep misconceptions  
 -2 ---

## NOTES:

abstraction to 2 balls for comparison is too simplifying

## OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 2.5 + 1.5 - 0 = 6$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant  
 1 X --- relevant, aimed at resolving unclear points in the report  
 2 --- + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no or irrelevant          | too few                   | no             | poor            |
| 1 | some main points              | few                       | X some                    | some           | reasonable      |
| 2 | X all relevant points         | X some                    | some correct              | reasonable     | X fair          |
| 3 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | X some aspects fine                  | some           |
| 2 | X some                     | X some correct            | good                                 | X reasonable   |
| 3 | good                       | X many correct            | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked  
 0 X --- some incorrect, inconclusive or too long  
 -1 --- deeply incorrect or show deep misconceptions  
 -2 ---

## NOTES:

good to point out decay rate definition, good to point out missing elements, probe into theory

## REVIEWER

Start from 1 and add/subtract

$$1 + 0 + 1.5 + 1.1 + 0.5 + 0 - 0 = 4$$

## QUESTIONS ASKED

- 0 X --- too few, mostly irrelevant  
 1 --- relevant, meant to clarify unclear points  
 1 --- + suitably allotted to Rep & Opp, most time used  
 2 --- + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | X good                            | X mostly adequate  | X reasonable   |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | X too short/long     | partially relevant | X some         |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | X too short/long      | X some               |
| 2 | relevant parts        | many                 |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 --- irrelevant  
 0 X --- none  
 1 --- relevant, constructive  
 -2 ---

## ANSWERS TO JURY QUESTIONS

- 0 X --- concise and correct or no questions asked  
 -1 --- some incorrect, inconclusive or too long  
 -2 --- deeply incorrect or show deep misconceptions

## NOTES:

important to point out what was physically wrong/incomplete

## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 3, Problem No. \_\_\_\_\_

sign \_\_\_\_\_

Mathelitsch, Leopold

Rep: Poland

Perf. official

Opp: Slovenia

Luvajac Rev: Russia

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment                      | science communication        |
|---|---|--|-------------------------------------|---|---|--------------------------------------|------------------------------|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                        | unclear, chaotic             |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly average                       | partly clear                 |
| 2 | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | some aspects above average           | average                      |
| 3 | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | interesting solution                 | some parts well done         |
| 4 | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | greater extent than expected         | overall clear, demonstrative |
| 5 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | + complex concepts well communicated |                              |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | many                                 | good                                 |
| 3 | + data/theory convincingly supported | some aspects efficient               |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked  
 --- some incorrect, inconclusive or too long  
 -1 --- deeply incorrect or show deep misconceptions

NOTES:

## OPPONENT

Start from 1 and add/subtract

$$1 + 2 + 2 + 2 - \square = 7$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant  
 --- relevant, aimed at resolving unclear points in the report  
 1 --- + short, apt and clear, well prioritized, all time used

NOTES:

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no or irrelevant          | too few                   | no             | poor            |
| 1 | some main points              | few                       | some                      | some           | reasonable      |
| 2 | main points                   | some                      | some correct              | reasonable     | fair            |
| 3 | all relevant points           | many                      | many correct              | fair           | efficient       |
| 4 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | some aspects fine                    | some           |
| 2 | some                       | some correct              | good                                 | reasonable     |
| 3 | good                       | many correct              | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked  
 --- some incorrect, inconclusive or too long  
 -1 --- deeply incorrect or show deep misconceptions

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1 + 1 + \square \pm \square - \square = 4$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant  
 --- relevant, meant to clarify unclear points  
 1 --- + suitably allotted to Rep & Opp, most time used  
 2 --- + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | good                              | mostly adequate    | reasonable     |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | too short/long       | partially relevant | some           |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | too short/long        | some                 |
| 2 | relevant parts        | many                 |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 --- irrelevant  
 0 --- none  
 1 --- relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 --- concise and correct or no questions asked  
 --- some incorrect, inconclusive or too long  
 -1 --- deeply incorrect or show deep misconceptions

NOTES:



# REPORTER

Start from 1 and add/subtract

$$1 + 4 + 1 - \square = 6$$



# SCORESHEET

Fight 3 Z, Stage: 3, Problem No. 15

Rep: Poland

Opp: Slovenia

sign

Rev: Russia

Musso, Maurizio

| REPORT | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | DISCUSSION WITH OPPONENT             | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|--------|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--------------------------------------|---|
| 0      | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | relevant arguments/responses         | reporter's conduct at the discussion                |
| 1      | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | too few                              | poor  |
| 2      | <del>fair</del>                                 | <del>fair</del>                        | <del>fair</del>                     | <del>not well fitting</del>                   | <del>some own input</del>                 | <del>average</del>           | <del>average</del>                   | <del>some aspects fine</del>         | <del>good</del>                                     |
| 3      | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | + data/theory convincingly supported | some aspects efficient                              |
| 4      | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | proved deep understanding            | overall efficient                                   |
| 5      | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |                                      |   |

NOTES:

# OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 3 + 3 - 0 = 8$$

| QUESTIONS ASKED  | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS          |  |
|--|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|---|--|
| 0<br>too few, mostly irrelevant                                | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation | 0<br>concise and correct or no questions asked    |  |
| 1<br>relevant, aimed at resolving unclear points in the report | almost nothing                | no or irrelevant          | too few                   | no             | poor            | almost no                  | too few                   | poor                                 | no             | 1<br>some incorrect, inconclusive or too long     |  |
| 2<br>+ short, apt and clear, well prioritized, all time used   | some main points              | few                       | some                      | some           | reasonable      | few                        | some                      | some aspects fine                    | some           | 2<br>deeply incorrect or show deep misconceptions |  |
|  | main points                   | some                      | some correct              | reasonable     | fair            | some                       | some correct              | good                                 | reasonable     |   |  |
|  | all relevant points           | many                      | many correct              | fair           | efficient       | good                       | many correct              | some aspects efficient               | fair           |   |  |
|  | practically all points        | practically all           | + improvement suggestions | very good      | + all time used | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |   |  |
| NOTES:   |                               |                           |                           |                |                 |                            |                           |                                      |                |   |  |

NOTES:

# REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1 + 1 + 1 \pm \square - \square = 5$$

| QUESTIONS ASKED  | REVIEW OF REPORT                  | REVIEW OF OPPOSITION | DISCUSSION ANALYSIS  | MISSED POINTS POINTED OUT | ANSWERS TO JURY QUESTIONS                      |
|--|-----------------------------------|----------------------|----------------------|---------------------------|--|
| 0 too few, mostly irrelevant   | report evaluation & understanding | speech evaluation    | discuss evaluation   | correct own opinions      | 0 concise and correct or no questions asked    |
| 1 relevant, meant to clarify unclear points                          | poor/wrong                        | poor/wrong           | almost no            | too few                   | 1 some incorrect, inconclusive or too long     |
| 2 + suitably allotted to Rep & Opp, most time used                   | partial                           | too short/long       | too short/long       | some                      | 2 deeply incorrect or show deep misconceptions |
| 3 + short, apt and clear, well prioritized, time managed efficiently | good                              | informative, apt     | relevant parts       | many                      |  |
|  | detailed, complex                 | condensed & accurate | accurate, conclusive | fully adequate            |  |

NOTES:

## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 3, Problem No. 15

sign *Alexander* *Pfleger*

Pfleger, Alexander

Rep: Poland

Opp: Slovenia

Rev: Russia

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                |
|---|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         |
| 2 | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              |
| 3 |   |  |                                     | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 |
| 4 | good  | good                                   | well performed, sufficient number   | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |
| 5 | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed |   |   |                              |                                      |
| 6 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | many                                 | good                                 |
| 3 | + data/theory convincingly supported | some aspects efficient               |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked
- 1 --- some incorrect, inconclusive or too long
- 2 --- deeply incorrect or show deep misconceptions

## NOTES:

*nice experimental setup*

## OPPONENT

Start from 1 and add/subtract

$$1 + 1,25 + 2 + 1,75 - 0 = 6$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant
- 1 --- relevant, aimed at resolving unclear points in the report
- 2 --- + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no or irrelevant          | too few                   | no             | poor            |
| 1 | some main points              | few                       | some                      | some           | reasonable      |
| 2 | main points                   | some                      | some correct              | reasonable     | fair            |
| 3 | all relevant points           | many                      | many correct              | fair           | efficient       |
| 4 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | some aspects fine                    | some           |
| 2 | some                       | some correct              | good                                 | reasonable     |
| 3 | good                       | many correct              | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked
- 1 --- some incorrect, inconclusive or too long
- 2 --- deeply incorrect or show deep misconceptions

## NOTES:

## REVIEWER

Start from 1 and add/subtract

$$1 + 4,25 + 1,5 + 1,5 + 1 - 0 - 9,25 = 5$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant
- 1 --- relevant, meant to clarify unclear points
- 2 --- + suitably allotted to Rep & Opp, most time used
- 3 --- + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | good                              | mostly adequate    | reasonable     |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | too short/long       | partially relevant | some           |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | too short/long        | some                 |
| 2 | relevant parts        | many                 |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 --- irrelevant
- 2 --- none
- 3 --- relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 --- concise and correct or no questions asked
- 1 --- some incorrect, inconclusive or too long
- 2 --- deeply incorrect or show deep misconceptions

## NOTES:



## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 3, Problem No. 15

sign

Plesch, Martin

Rep: Poland

Szymon

Opp: Slovenia

Ritja

Rev: Russia

Alex

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | DISCUSSION WITH OPPONENT             | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|---|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--------------------------------------|---|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | relevant arguments/responses         | reporter's conduct at the discussion                |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | too few                              | poor  |
| 2 | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | some                                 | some aspects fine                                   |
| 3 | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | many                                 | good  |
| 4 | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | + data/theory convincingly supported | some aspects efficient                              |
| 5 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated | proved deep understanding            | overall efficient                                   |

NOTES:

## OPPONENT

Start from 1 and add/subtract

$$1 + 1.75 + 2.5 + 2.5 - \square = 8$$

| QUESTIONS ASKED |   | OPPOSITION (SPEECH)           |                           |                        |                           |                 | DISCUSSION WITH REPORTER   |                        |                                      |                        | ANSWERS TO JURY and REVIEWER'S QUESTIONS |   |  |
|-----------------|---|-------------------------------|---------------------------|------------------------|---------------------------|-----------------|----------------------------|------------------------|--------------------------------------|------------------------|--|---|--|
| 0               | too few, mostly irrelevant                                | understanding of presentation | relevant topics addressed | own opinions presented | prioritisation            | time management | relevant scientific topics | own opinions presented | opponent's conduct of the discussion | prioritisation         | 0  | concise and correct or no questions asked |  |
| 1               | relevant, aimed at resolving unclear points in the report | 0                             | almost nothing            | no or irrelevant       | too few                   | no              | almost no                  | too few                | poor                                 | no                     | 0  | no questions asked                        |  |
| 2               | + short, apt and clear, well prioritized, all time used   | 1                             | some main points          | few                    | some                      | reasonable      | 1                          | few                    | some                                 | some aspects fine      | some                                     | 1   | some incorrect, inconclusive or too long     |
|                 |   | 2                             | main points               | some                   | some correct              | reasonable      | 2                          | some                   | some correct                         | good                   | reasonable                               | 2   | deeply incorrect or show deep misconceptions |
|                 |   | 3                             | all relevant points       | many                   | many correct              | fair            | 3                          | good                   | many correct                         | some aspects efficient | fair                                     | 3   |  |
|                 |   | 4                             | practically all points    | practically all        | + improvement suggestions | very good       | 4                          | new crucial point(s)   | + improvement suggestions            | overall efficient      | very good                                | 4   |  |

NOTES:

MEASURING RATE OF DECAY

## REVIEWER

Start from 1 and add/subtract

$$1 + 0.5 + 1 + 1 + 0.5 \pm \square - \square = 4$$

| QUESTIONS ASKED  | REVIEW OF REPORT                  | REVIEW OF OPPOSITION | DISCUSSION ANALYSIS   | MISSED POINTS POINTED OUT | ANSWERS TO JURY QUESTIONS                          |
|--|-----------------------------------|----------------------|-----------------------|---------------------------|--|
| 0 --- too few, mostly irrelevant   | report evaluation & understanding | speech evaluation    | discussion evaluation | correct own opinions      | 0 --- concise and correct or no questions asked    |
| 1 --- + suitably allotted to Rep & Opp, most time used                   | pros & cons                       | pros & cons          | correct own opinions  | 1 --- irrelevant          | 1 --- some incorrect, inconclusive or too long     |
| 2 --- + short, apt and clear, well prioritized, time managed efficiently | no                                | no                   | almost no             | none                      | 2 --- deeply incorrect or show deep misconceptions |
|  | partial                           | partial              | too short/long        | relevant parts            |  |
|  | mostly adequate                   | mostly adequate      | many                  | fully adequate            |  |
|  | detailed, complex                 | fully adequate       | good                  |                           |  |

NOTES:

# REPORTER

Start from 1 and add/subtract

$$1 + 3 + 1 - \square = 5$$



# SCORESHEET

Fight 3 Z, Stage: 3, Problem No. \_\_\_\_\_

sign \_\_\_\_\_

Rep: Poland

Opp: Slovenia

Rev: Russia

Siess, Josef

| REPORT  |  |   |   |   |                                    |  | DISCUSSION WITH OPPONENT                   |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS  |
|---|--|---|---|---|------------------------------------|--|--|--------------------------------------|--|
| phenomenon explanation                                | theory/model                                 | relevant experiments                      | comparison between theory and experiment            | own contribution                                | task fulfilment                    | science communication                      | relevant arguments/responses               | reporter's conduct at the discussion |  |
| 0 --- almost no                                       | 0 --- almost no                              | 0 --- too few                             | 0 --- no/ almost no                                 | 0 --- others' data, incorrectly cited           | 0 --- misunderstood                | 0 --- unclear, chaotic                     | 0 --- too few                              | 0 --- poor                           | 0 ✓ concise and correct or no questions asked<br>1 --- some incorrect,<br>2 --- inconclusive or too long<br>3 --- deeply incorrect or show deep misconceptions |
| 1 --- some  | 1 --- some                                   | 1 --- some                                | 1 --- some  | 1 --- review of sources, cited                  | 1 --- partly                       | 1 --- partly clear                         | 1 --- some                                 | 1 --- some aspects fine              |  |
| 2 --- fair  | 2 --- fair                                   | 2 --- fair                                | 2 --- not well fitting                              | 2 --- some own input                            | 2 --- average                      | 2 --- average                              | 2 --- many                                 | 2 --- good                           |  |
| 3 --- good  | 3 --- good                                   | 3 --- well performed, sufficient number   | 3 --- deviations qualitatively analysed             | 3 --- + some interesting results                | 3 --- some aspects above average   | 3 --- some parts well done                 | 3 --- + data/theory convincingly supported | 3 --- some aspects efficient         |  |
| 4 --- detailed demonstrative                          | 4 --- quite detailed, correct                | 4 --- + results explained errors analysed | 4 --- + theory limits explained, conclusive         | 4 --- considerable experimental or theoretical  | 4 --- interesting solution         | 4 --- overall clear, demonstrative         |  |                                      |  |
| 5 --- deep and comprehensible, shows physical insight | 5 --- detailed, complex, completely testable | 5 --- + reproducible, convincing analysis | 5 --- well fitting, deviations analysed, conclusive | 5 --- considerable experimental and theoretical | 5 --- greater extent than expected | 5 --- + complex concepts well communicated | 5 --- proved deep understanding            | 5 --- overall efficient              |  |
| 6 ---   |  |   |   |   |                                    |  |  |                                      |  |

NOTES:

diff materials: 1 or 2 strings ✓ correlation? miselligment ✓ mass

# OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 2 + 2 - \square = 6$$

| QUESTIONS ASKED   |   | OPPOSITION (SPEECH)           |                           |                                 |                  |                       | DISCUSSION WITH REPORTER   |                                 |                                      |                  | ANSWERS TO JURY and REVIEWER'S QUESTIONS   |
|---|---|-------------------------------|---------------------------|---------------------------------|------------------|-----------------------|----------------------------|---------------------------------|--------------------------------------|------------------|--|
|   |   | understanding of presentation | relevant topics addressed | own opinions presented          | prioritisation   | time management       | relevant scientific topics | own opinions presented          | opponent's conduct of the discussion | prioritisation   |  |
| 0 --- too few, mostly irrelevant                              | 0 --- relevant, aimed at resolving unclear points in the report | 0 --- almost nothing          | 0 --- no or irrelevant    | 0 --- too few                   | 0 --- no         | 0 --- poor            | 0 --- almost no            | 0 --- too few                   | 0 --- poor                           | 0 --- no         | 0 ✓ concise and correct or no questions asked<br>1 --- some incorrect,<br>2 --- inconclusive or too long<br>3 --- deeply incorrect or show deep misconceptions |
| 1 --- + short, apt and clear, well prioritized, all time used |   | 1 --- some main points        | 1 --- few                 | 1 --- some                      | 1 --- some       | 1 --- reasonable      | 1 --- few                  | 1 --- some                      | 1 --- some aspects fine              | 1 --- some       |  |
|   |   | 2 --- main points             | 2 --- some                | 2 --- some correct              | 2 --- reasonable | 2 --- fair            | 2 --- some                 | 2 --- some correct              | 2 --- good                           | 2 --- reasonable |  |
|   |   | 3 --- all relevant points     | 3 --- many                | 3 --- many correct              | 3 --- fair       | 3 --- efficient       | 3 --- good                 | 3 --- many correct              | 3 --- some aspects efficient         | 3 --- fair       |  |
|   |   | 4 --- practically all points  | 4 --- practically all     | 4 --- + improvement suggestions | 4 --- very good  | 4 --- + all time used | 4 --- new crucial point(s) | 4 --- + improvement suggestions | 4 --- overall efficient              | 4 --- very good  |  |

NOTES:

parameters investigated material # balls hollow/full mass ✓ error bars rate of decay: other parameters? solid, hollow friction.

# REVIEWER

Start from 1 and add/subtract

$$1 + 0.5 + 1.5 + 1 + 1 - \square = 4$$

| QUESTIONS ASKED  |   | REVIEW OF REPORT                  |                          |                  | REVIEW OF OPPOSITION       |                          |                  | DISCUSSION ANALYSIS        |                      | MISSED POINTS POINTED OUT    | ANSWERS TO JURY QUESTIONS  |
|--|---|-----------------------------------|--------------------------|------------------|----------------------------|--------------------------|------------------|----------------------------|----------------------|------------------------------|--|
|  |   | report evaluation & understanding | pros & cons              | prioritisation   | speech evaluation          | pros & cons              | prioritisation   | discussion evaluation      | correct own opinions |                              |  |
| 0 --- too few, mostly irrelevant   | 0 --- relevant, meant to clarify unclear points | 0 --- poor/wrong                  | 0 --- irrelevant         | 0 --- no         | 0 --- poor/wrong           | 0 --- irrelevant         | 0 --- no         | 0 --- almost no            | 0 --- too few        | 0 --- irrelevant             | 0 ✓ concise and correct or no questions asked<br>1 --- some incorrect,<br>2 --- inconclusive or too long<br>3 --- deeply incorrect or show deep misconceptions |
| 1 --- + suitably allotted to Rep & Opp, most time used                   |   | 1 --- partial                     | 1 --- partially relevant | 1 --- some       | 1 --- too short/long       | 1 --- partially relevant | 1 --- some       | 1 --- too short/long       | 1 --- some           | 1 --- none                   |  |
| 2 --- + short, apt and clear, well prioritized, time managed efficiently |   | 2 --- good                        | 2 --- mostly adequate    | 2 --- reasonable | 2 --- informative, apt     | 2 --- mostly adequate    | 2 --- reasonable | 2 --- relevant parts       | 2 --- many           | 2 --- relevant, constructive |  |
|  |   | 3 --- detailed, complex           | 3 --- fully adequate     | 3 --- good       | 3 --- condensed & accurate | 3 --- fully adequate     | 3 --- good       | 3 --- accurate, conclusive | 3 --- fully adequate | 3 ---                        |  |
|  |   |                                   |                          |                  |                            |                          |                  |                            |                      |                              |  |

NOTES:

improvements!! ✓ focus on parameter



## REPORTER

Start from 1 and add/subtract



## SCORESHEET

Fight 3 Z, Stage: 4, Problem No. 6

Rep: Slovenia

Opp: Russia

Rev: Belarus

Lindner, Thomas

## REPORT

|   | phenomenon explanation                          | theory/model                             | relevant experiments  | comparison between theory and experiment                              | own contribution                                   | task fulfilment                             | science communication                       |
|---|---|--|---|---|--|---|---|
| 0 | almost no                                       | almost no                                | too few   | no/ almost no   | others' data, incorrectly cited                    | misunderstood                               | unclear, chaotic                            |
| 1 | some  | some                                     | some  | some  | review of sources, cited                           | partly                                      | partly clear                                |
| 2 | <input checked="" type="checkbox"/> fair        | fair                                     | <input checked="" type="checkbox"/> fair                              | not well fitting  | <input checked="" type="checkbox"/> some own input | <input checked="" type="checkbox"/> average | <input checked="" type="checkbox"/> average |
| 3 | good  | <input checked="" type="checkbox"/> good | <input checked="" type="checkbox"/> well performed, sufficient number | <input checked="" type="checkbox"/> deviations qualitatively analysed | + some interesting results                         | some aspects above average                  | some parts well done                        |
| 4 | detailed demonstrative                          | quite detailed, correct                  | + results explained errors analysed                                   | + theory limits explained, conclusive                                 | considerable experimental or theoretical           | interesting solution                        | overall clear, demonstrative                |
| 5 | deep and comprehensible, shows physical insight | detailed, complex, completely testable   | + reproducible, convincing analysis                                   | well fitting, deviations analysed, conclusive                         | considerable experimental and theoretical          | greater extent than expected                | + complex concepts well communicated        |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion                       |
|---|--------------------------------------|--|
| 0 | too few                              | poor   |
| 1 | some                                 | some aspects fine  |
| 2 | many                                 | good   |
| 3 | + data/theory convincingly supported | <input checked="" type="checkbox"/> some aspects efficient |
| 4 | proved deep understanding            | overall efficient  |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 ☒ concise and correct or no questions asked
- 1 some incorrect, inconclusive or too long
- 2 deeply incorrect or show deep misconceptions

## NOTES:

explain (theoretically)  $\rho(t)$ ! , unfortunate limitation on sub-problem, smart measurement setup

## OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 0.5 + 0.5 - 0 = 3$$

## QUESTIONS ASKED

- 0 too few, mostly irrelevant
- 1 relevant, aimed at resolving unclear points in the report
- 2 ☒ + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation                        | relevant topics addressed               | own opinions presented                   | prioritisation                           | time management                                |
|---|--|---|--|--|--|
| 0 | almost nothing                                       | no or irrelevant                        | too few                                  | no                                       | <input checked="" type="checkbox"/> poor       |
| 1 | <input checked="" type="checkbox"/> some main points | <input checked="" type="checkbox"/> few | <input checked="" type="checkbox"/> some | <input checked="" type="checkbox"/> some | <input checked="" type="checkbox"/> reasonable |
| 2 | main points  | some                                    | some correct                             | reasonable                               | fair   |
| 3 | all relevant points                                  | many                                    | many correct                             | fair                                     | efficient                                      |
| 4 | practically all points                               | practically all                         | + improvement suggestions                | very good                                | + all time used                                |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics              | own opinions presented                   | opponent's conduct of the discussion                  | prioritisation                           |
|---|---|--|---|--|
| 0 | almost no                               | too few                                  | poor  | <input checked="" type="checkbox"/> no   |
| 1 | <input checked="" type="checkbox"/> few | <input checked="" type="checkbox"/> some | <input checked="" type="checkbox"/> some aspects fine | <input checked="" type="checkbox"/> some |
| 2 | some                                    | some correct                             | good  | reasonable                               |
| 3 | good                                    | many correct                             | some aspects efficient                                | fair                                     |
| 4 | new crucial point(s)                    | + improvement suggestions                | overall efficient                                     | very good                                |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 ☒ concise and correct or no questions asked
- 1 some incorrect, inconclusive or too long
- 2 deeply incorrect or show deep misconceptions

## NOTES:

good to point out air-velocity dependency

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1.5 + 1.5 + 1 + 0 - 0 = 6$$

## QUESTIONS ASKED

- 0 too few, mostly irrelevant
- 1 relevant, meant to clarify unclear points
- 2 ☒ + suitably allotted to Rep & Opp, most time used
- 3 + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding           | pros & cons   | prioritisation                                 |
|---|---|---|--|
| 0 | poor/wrong                                  | irrelevant  | no   |
| 1 | <input checked="" type="checkbox"/> partial | partially relevant                                  | <input checked="" type="checkbox"/> some       |
| 2 | <input checked="" type="checkbox"/> good    | <input checked="" type="checkbox"/> mostly adequate | <input checked="" type="checkbox"/> reasonable |
| 3 | detailed, complex                           | fully adequate                                      | good   |

## REVIEW OF OPPOSITION

|   | speech evaluation  | pros & cons   | prioritisation                                 |
|---|--|---|--|
| 0 | poor/wrong   | irrelevant  | no   |
| 1 | <input checked="" type="checkbox"/> too short/long       | partially relevant                                  | <input checked="" type="checkbox"/> some       |
| 2 | <input checked="" type="checkbox"/> informative, apt     | <input checked="" type="checkbox"/> mostly adequate | <input checked="" type="checkbox"/> reasonable |
| 3 | <input checked="" type="checkbox"/> condensed & accurate | fully adequate                                      | good   |

## DISCUSSION ANALYSIS

|   | discussion evaluation                              | correct own opinions                     |
|---|--|--|
| 0 | almost no  | too few                                  |
| 1 | <input checked="" type="checkbox"/> too short/long | <input checked="" type="checkbox"/> some |
| 2 | <input checked="" type="checkbox"/> relevant parts | <input checked="" type="checkbox"/> many |
| 3 | accurate, conclusive                               | fully adequate                           |

## MISSED POINTS POINTED OUT

- 1 irrelevant
- 2 ☒ none
- 3 relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 ☒ concise and correct or no questions asked
- 1 some incorrect, inconclusive or too long
- 2 deeply incorrect or show deep misconceptions

## NOTES:

ask questions that help with understanding, good to bring up air stream

## REPORTER

Start from 1 and add/subtract

$$1 + 5 + 2 - \square = 8$$



## SCORESHEET

Fight 3 Z, Stage: 4, Problem No. \_\_\_\_\_

sign \_\_\_\_\_

Mathelitsch, Leopold

Rep: Slovenia

Opp: Russia

Rev: Belarus

| REPORT  |  |                                     |   |   |                              |                                      | DISCUSSION WITH OPPONENT                   |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--|--------------------------------------|---|
| phenomenon explanation                                | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses               | reporter's conduct at the discussion |   |
| 0 --- almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | 0 --- too few                              | poor                                 | 0 --- concise and correct or no questions asked     |
| 1 --- some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | 1 --- some                                 | some aspects fine                    | 1 --- some incorrect, inconclusive or too long      |
| 2 --- fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | 2 --- many                                 | good                                 | 2 --- deeply incorrect or show deep misconceptions  |
| 3 --- good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | 3 --- + data/theory convincingly supported | some aspects efficient               |   |
| 4 --- detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |  |                                      |   |
| 5 --- deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated | 3 --- proved deep understanding            | overall efficient                    |   |

NOTES:

+ vacuum

- different responses

## OPPONENT

Start from 1 and add/subtract

$$1 + 2 + 1 + 2 - \square = 3$$

| QUESTIONS ASKED   |  | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS           |
|---|--|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|--|
|   |  | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |  |
| 0 --- too few, mostly irrelevant                                |  | almost nothing                | no or irrelevant          | too few                   | no             | poor            | 0 --- almost no            | too few                   | poor                                 | no             | 0 --- concise and correct or no questions asked    |
| 1 --- relevant, aimed at resolving unclear points in the report |  | some main points              | few                       | some                      | some           | reasonable      | 1 --- some                 | some correct              | some aspects fine                    | some           | 1 --- some incorrect, inconclusive or too long     |
| 2 --- + short, apt and clear, well prioritized, all time used   |  | main points                   | some                      | some correct              | reasonable     | fair            | 2 --- good                 | many correct              | some aspects efficient               | fair           | 2 --- deeply incorrect or show deep misconceptions |
|   |  | all relevant points           | many                      | many correct              | fair           | efficient       | 3 --- new crucial point(s) | + improvement suggestions | overall efficient                    | very good      |  |
|   |  | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |                            |                           |                                      |                |  |

NOTES:

## REVIEWER

Start from 1 and add/subtract

$$1 + 2 + 2 + 1 + 2 \pm \square - \square = 8$$

| QUESTIONS ASKED  |  | REVIEW OF REPORT                  |                    |                | REVIEW OF OPPOSITION       |                    |                | DISCUSSION ANALYSIS        |                      | MISSED POINTS POINTED OUT    | ANSWERS TO JURY QUESTIONS                          |
|--|--|-----------------------------------|--------------------|----------------|----------------------------|--------------------|----------------|----------------------------|----------------------|------------------------------|--|
|  |  | report evaluation & understanding | pros & cons        | prioritisation | speech evaluation          | pros & cons        | prioritisation | discussion evaluation      | correct own opinions |                              |  |
| 0 --- too few, mostly irrelevant   |  | poor/wrong                        | irrelevant         | no             | 0 --- poor/wrong           | irrelevant         | no             | 0 --- almost no            | too few              | -1 --- irrelevant            | 0 --- concise and correct or no questions asked    |
| 1 --- relevant, meant to clarify unclear points                          |  | partial                           | partially relevant | some           | 1 --- too short/long       | partially relevant | some           | 1 --- too short/long       | some                 | 0 --- none                   | 1 --- some incorrect, inconclusive or too long     |
| 2 --- + suitably allotted to Rep & Opp, most time used                   |  | good                              | mostly adequate    | reasonable     | 2 --- informative, apt     | mostly adequate    | reasonable     | 2 --- relevant parts       | many                 | 1 --- relevant, constructive | 2 --- deeply incorrect or show deep misconceptions |
| 3 --- + short, apt and clear, well prioritized, time managed efficiently |  | detailed, complex                 | fully adequate     | good           | 3 --- condensed & accurate | fully adequate     | good           | 3 --- accurate, conclusive | fully adequate       |                              |  |

NOTES:



# REPORTER

Start from 1 and add/subtract

$$1 + 4 + 1 - 0 = 6$$



# SCORESHEET

Fight 3 Z, Stage: 4, Problem No. 6

Rep: Slovenia

Opp: Russia

Rev: Belarus

sign

Musso, Maurizio

Musso, Maurizio

| REPORT  |  |                                     |   |   |                              |                                      | DISCUSSION WITH OPPONENT                   |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS |
|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--|--------------------------------------|---|
| phenomenon explanation                                | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses               | reporter's conduct at the discussion |   |
| 0 --- almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | 0 --- too few                              | poor                                 | 0 --- concise and correct or no questions asked     |
| 1 --- some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | 1 --- some                                 | some aspects fine                    | 1 --- some incorrect, inconclusive or too long      |
| 2 --- fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              | 2 --- many                                 | good                                 | 2 --- deeply incorrect or show deep misconceptions  |
| 3 --- good  | good                                   | well performed, sufficient number   | deviations                                    | + some interesting results                | some aspects above average   | some parts well done                 | 3 --- + data/theory convincingly supported | some aspects efficient               |   |
| 4 --- detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | qualitatively analysed                        | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |  |                                      |   |
| 5 --- deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |  |                                      |   |

NOTES:

# OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 2 + 1 - 0 = 5$$

| QUESTIONS ASKED   |  | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS           |
|---|--|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|--|
|   |  | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |  |
| 0 --- too few, mostly irrelevant                                |  | almost nothing                | no or irrelevant          | too few                   | no             | poor            | 0 --- almost no            | too few                   | poor                                 | no             | 0 --- concise and correct or no questions asked    |
| 1 --- relevant, aimed at resolving unclear points in the report |  | some main points              | few                       | some                      | some           | reasonable      | 1 --- few                  | some                      | some aspects fine                    | some           | 1 --- some incorrect, inconclusive or too long     |
| 2 --- + short, apt and clear, well prioritized, all time used   |  | main points                   | some                      | some correct              | reasonable     | fair            | 2 --- good                 | many correct              | some aspects efficient               | fair           | 2 --- deeply incorrect or show deep misconceptions |
|   |  | all relevant points           | many                      | many correct              | fair           | efficient       | 3 --- new crucial point(s) | + improvement suggestions | overall efficient                    | very good      |  |
|   |  | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |                            |                           |                                      |                |  |

NOTES:

# REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 2 + 2 + 1 - 0 - 0 = 7$$

| QUESTIONS ASKED  |  | REVIEW OF REPORT                  |                    |                | REVIEW OF OPPOSITION       |                    |                | DISCUSSION ANALYSIS        |                      | MISSED POINTS POINTED OUT    | ANSWERS TO JURY QUESTIONS                          |
|--|--|-----------------------------------|--------------------|----------------|----------------------------|--------------------|----------------|----------------------------|----------------------|------------------------------|--|
|  |  | report evaluation & understanding | pros & cons        | prioritisation | speech evaluation          | pros & cons        | prioritisation | discussion evaluation      | correct own opinions |                              |  |
| 0 --- too few, mostly irrelevant   |  | poor/wrong                        | irrelevant         | no             | 0 --- poor/wrong           | irrelevant         | no             | 0 --- almost no            | too few              | -1 --- irrelevant            | 0 --- concise and correct or no questions asked    |
| 1 --- relevant, meant to clarify unclear points                          |  | partial                           | partially relevant | some           | 1 --- too short/long       | partially relevant | some           | 1 --- too short/long       | some                 | 0 --- none                   | 1 --- some incorrect, inconclusive or too long     |
| 2 --- + suitably allotted to Rep & Opp, most time used                   |  | good                              | mostly adequate    | reasonable     | 2 --- informative, apt     | mostly adequate    | reasonable     | 2 --- relevant parts       | many                 | 1 --- relevant, constructive | 2 --- deeply incorrect or show deep misconceptions |
| 3 --- + short, apt and clear, well prioritized, time managed efficiently |  | detailed, complex                 | fully adequate     | good           | 3 --- condensed & accurate | fully adequate     | good           | 3 --- accurate, conclusive | fully adequate       |                              |  |

NOTES:

## REPORTER

Start from 1 and add/subtract

$$1 + 4.5 + 1.5 - 0 = 7$$



## SCORESHEET

Fight 3 Z, Stage: 4, Problem No. 6

sign *Alexander Pfeleger*

Pfeleger, Alexander

Rep: Slovenia

Opp: Russia

Rev: Belarus

| REPORT  |  |                                     |   |   |                              |                                      | DISCUSSION WITH OPPONENT                   |                                      | ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS   |
|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|--|--------------------------------------|---|
| phenomenon explanation                                | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                | relevant arguments/responses               | reporter's conduct at the discussion |   |
| 0 --- almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     | 0 --- too few                              | poor                                 | 0 --- concise and correct or no questions asked<br>-1 --- some incorrect, inconclusive or too long<br>-2 --- deeply incorrect or show deep misconceptions |
| 1 --- some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         | 1 --- some                                 | some aspects fine                    |   |
| 2 --- fair  | fair                                   | fair                                | not well fitting                              | some own input                            | * average                    | average                              | 2 --- many                                 | good                                 |   |
| 3 --- good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 | 3 --- + data/theory convincingly supported | some aspects efficient               |   |
| 4 --- detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         | 4 --- proved deep understanding            | overall efficient                    |   |
| 5 --- deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |  |                                      |   |

NOTES:

## OPPONENT

Start from 1 and add/subtract

$$1 + 0.5 + 1.5 + 1.5 - 0.5 = 3$$

| QUESTIONS ASKED   |  | OPPOSITION (SPEECH)           |                           |                           |                |                 | DISCUSSION WITH REPORTER   |                           |                                      |                | ANSWERS TO JURY and REVIEWER'S QUESTIONS  |
|---|--|-------------------------------|---------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------------------|----------------|---|
|   |  | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |   |
| 0 --- too few, mostly irrelevant                                |  | 0 --- almost nothing          | no or irrelevant          | too few                   | no             | poor            | 0 --- almost no            | too few                   | poor                                 | no             | 0 --- concise and correct or no questions asked<br>-1 --- some incorrect, inconclusive or too long<br>-2 --- deeply incorrect or show deep misconceptions |
| 1 --- relevant, aimed at resolving unclear points in the report |  | 1 --- some main points        | few                       | some                      | some           | reasonable      | 1 --- few                  | * some                    | some aspects fine                    | some           |   |
| 2 --- + short, apt and clear, well prioritized, all time used   |  | 2 --- main points             | some                      | some correct              | reasonable     | fair            | 2 --- some                 | some correct              | good                                 | reasonable     |   |
|   |  | 3 --- all relevant points     | many                      | many correct              | fair           | efficient       | 3 --- good                 | many correct              | some aspects efficient               | fair           |   |
|   |  | 4 --- practically all points  | practically all           | + improvement suggestions | very good      | + all time used | 4 --- new crucial point(s) | + improvement suggestions | overall efficient                    | very good      |   |

NOTES:

only 2/3 discussion time

## REVIEWER

Start from 1 and add/subtract

$$1 + 1.5 + 1.5 + 1.5 + 1 + 0.5 - 0.5 = 6$$

| QUESTIONS ASKED  |  | REVIEW OF REPORT                  |                    |                | REVIEW OF OPPOSITION       |                    |                | DISCUSSION ANALYSIS        |                      | MISSED POINTS POINTED OUT    | ANSWERS TO JURY QUESTIONS   |
|--|--|-----------------------------------|--------------------|----------------|----------------------------|--------------------|----------------|----------------------------|----------------------|------------------------------|---|
|  |  | report evaluation & understanding | pros & cons        | prioritisation | speech evaluation          | pros & cons        | prioritisation | discussion evaluation      | correct own opinions |                              |   |
| 0 --- too few, mostly irrelevant   |  | 0 --- poor/wrong                  | irrelevant         | no             | 0 --- poor/wrong           | irrelevant         | no             | 0 --- almost no            | too few              | -1 --- irrelevant            | 0 --- concise and correct or no questions asked<br>-1 --- some incorrect, inconclusive or too long<br>-2 --- deeply incorrect or show deep misconceptions |
| 1 --- relevant, meant to clarify unclear points                          |  | 1 --- partial                     | partially relevant | some           | 1 --- too short/long       | partially relevant | some           | 1 --- too short/long       | some                 | 0 --- none                   |   |
| 2 --- + suitably allotted to Rep & Opp, most time used                   |  | 2 --- good                        | mostly adequate    | reasonable     | 2 --- informative, apt     | mostly adequate    | reasonable     | 2 --- relevant parts       | many                 | 1 --- relevant, constructive |   |
| 3 --- + short, apt and clear, well prioritized, time managed efficiently |  | 3 --- detailed, complex           | fully adequate     | good           | 3 --- condensed & accurate | fully adequate     | good           | 3 --- accurate, conclusive | fully adequate       |                              |   |
|  |  |                                   |                    |                |                            |                    |                |                            |                      |                              |   |

NOTES:



## REPORTER

Start from 1 and add/subtract

$$1 + 5 + 2.75 - \square = 9$$



## SCORESHEET

Fight 3 Z, Stage: 4, Problem No. AVRILsign [Signature]

Plesch, Martin

Rep: Slovenia Nika

Opp: Russia

NURAT

Rev: Belarus Hanna

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                 | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                |
|---|---|--|--------------------------------------|---|---|------------------------------|--------------------------------------|
| 0 | almost no                                       | almost no                              | too few                              | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |
| 1 | some  | some                                   | some                                 | some  | review of sources, cited                  | partly                       | partly clear                         |
| 2 | fair  | fair                                   | fair                                 | not well fitting                              | some own input                            | average                      | average                              |
| 3 | good  | good                                   | well performed, sufficient number    | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 |
| 4 | good  | good                                   | + results explained, errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |
| 5 | detailed, demonstrative                         | quite detailed, correct                |                                      |   |   |                              |                                      |
| 6 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis  | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | many                                 | good                                 |
| 3 | + data/theory convincingly supported | some aspects efficient               |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked  
 1 --- some incorrect, inconclusive or too long  
 2 --- deeply incorrect or show deep misconceptions

NOTES:

TRENIJE

## OPPONENT

Start from 1 and add/subtract

$$1 + 0.5 + 0.5 + 1 - \square = 3$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant  
 1 --- relevant, aimed at resolving unclear points in the report  
 2 --- + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no of irrelevant          | too few                   | no             | poor            |
| 1 | some main points              | few                       | some                      | some           | reasonable      |
| 2 | main points                   | some                      | some correct              | reasonable     | fair            |
| 3 | all relevant points           | many                      | many correct              | fair           | efficient       |
| 4 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | some aspects fine                    | some           |
| 2 | some                       | some correct              | good                                 | reasonable     |
| 3 | good                       | many correct              | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 --- concise and correct or no questions asked  
 1 --- some incorrect, inconclusive or too long  
 2 --- deeply incorrect or show deep misconceptions

NOTES:

DISAGREE WITH STATEMENTS → no t-r comp?  
 WATER FLOW??

KRATKO

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1 + 2.25 + 0.75 - \square = 5$$

## QUESTIONS ASKED

- 0 --- too few, mostly irrelevant  
 1 --- relevant, meant to clarify unclear points  
 2 --- + suitably allotted to Rep & Opp, most time used  
 3 --- + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | good                              | mostly adequate    | reasonable     |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | too short/long       | partially relevant | some           |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | too short/long        | some                 |
| 2 | relevant parts        | many                 |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 --- irrelevant  
 0 --- none  
 1 --- relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 --- concise and correct or no questions asked  
 1 --- some incorrect, inconclusive or too long  
 2 --- deeply incorrect or show deep misconceptions

NOTES:

HAGNUS -  
 GENERALLY DISAGREE

## REPORTER

Start from 1 and add/subtract

$$1 + 3.5 + 2.5 - \boxed{\phantom{00}} = \boxed{7}$$



## SCORESHEET

Fight 3 Z, Stage: 4, Problem No. 6

sign

Siess, Josef

Rep: Slovenia

Opp: Russia

Rev: Belarus

## REPORT

|   | phenomenon explanation                          | theory/model                           | relevant experiments                | comparison between theory and experiment      | own contribution                          | task fulfilment              | science communication                |
|---|---|--|-------------------------------------|---|---|------------------------------|--------------------------------------|
| 0 | almost no                                       | almost no                              | too few                             | no/ almost no                                 | others' data, incorrectly cited           | misunderstood                | unclear, chaotic                     |
| 1 | some  | some                                   | some                                | some  | review of sources, cited                  | partly                       | partly clear                         |
| 2 | fair  | fair                                   | fair                                | not well fitting                              | some own input                            | average                      | average                              |
| 3 | good  | good                                   | well performed, sufficient number   | deviations qualitatively analysed             | + some interesting results                | some aspects above average   | some parts well done                 |
| 4 | detailed demonstrative                          | quite detailed, correct                | + results explained errors analysed | + theory limits explained, conclusive         | considerable experimental or theoretical  | interesting solution         | overall clear, demonstrative         |
| 5 | deep and comprehensible, shows physical insight | detailed, complex, completely testable | + reproducible, convincing analysis | well fitting, deviations analysed, conclusive | considerable experimental and theoretical | greater extent than expected | + complex concepts well communicated |

## DISCUSSION WITH OPPONENT

|   | relevant arguments/responses         | reporter's conduct at the discussion |
|---|--------------------------------------|--------------------------------------|
| 0 | too few                              | poor                                 |
| 1 | some                                 | some aspects fine                    |
| 2 | many                                 | good                                 |
| 3 | + data/theory convincingly supported | some aspects efficient               |
| 4 | proved deep understanding            | overall efficient                    |

## ANSWERS TO JURY, OPPONENT, and REVIEWER'S QUESTIONS

- 0 ☒ concise and correct or no questions asked
- 1 ☐ some incorrect, inconclusive or too long
- 2 ☐ deeply incorrect or show deep misconceptions

## NOTES:

diff theory/practice.  
live demo (4 blow!)

diff jets. upper/lower ball.  
propeller

air ~~vacuum~~ 10 mbar

4 parameters.  
- speed, acceleration

- how applied blow in vacuum?  
- Airflow m<sup>3</sup>/sec  
angled air flow?

## OPPONENT

Start from 1 and add/subtract

$$1 + 1 + 1 + 0.5 - \boxed{\phantom{00}} = \boxed{4}$$

## QUESTIONS ASKED

- 0 ☐ too few, mostly irrelevant
- 1 ☒ relevant, aimed at resolving unclear points in the report
- 2 ☐ + short, apt and clear, well prioritized, all time used

## OPPOSITION (SPEECH)

|   | understanding of presentation | relevant topics addressed | own opinions presented    | prioritisation | time management |
|---|-------------------------------|---------------------------|---------------------------|----------------|-----------------|
| 0 | almost nothing                | no or irrelevant          | too few                   | no             | poor            |
| 1 | some main points              | few                       | some                      | some           | reasonable      |
| 2 | main points                   | some                      | some correct              | reasonable     | fair            |
| 3 | all relevant points           | many                      | many correct              | fair           | efficient       |
| 4 | practically all points        | practically all           | + improvement suggestions | very good      | + all time used |

## DISCUSSION WITH REPORTER

|   | relevant scientific topics | own opinions presented    | opponent's conduct of the discussion | prioritisation |
|---|----------------------------|---------------------------|--------------------------------------|----------------|
| 0 | almost no                  | too few                   | poor                                 | no             |
| 1 | few                        | some                      | some aspects fine                    | some           |
| 2 | some                       | some correct              | good                                 | reasonable     |
| 3 | good                       | many correct              | some aspects efficient               | fair           |
| 4 | new crucial point(s)       | + improvement suggestions | overall efficient                    | very good      |

## ANSWERS TO JURY and REVIEWER'S QUESTIONS

- 0 ☒ concise and correct or no questions asked
- 1 ☐ some incorrect, inconclusive or too long
- 2 ☐ deeply incorrect or show deep misconceptions

## NOTES:

water flow?

poor, time left!

water flow?

## REVIEWER

Start from 1 and add/subtract

$$1 + 1 + 1.5 + 1.5 + 1.5 - \boxed{\phantom{00}} = \boxed{7}$$

## QUESTIONS ASKED

- 0 ☐ too few, mostly irrelevant
- 1 ☒ relevant, meant to clarify unclear points
- 2 ☐ + suitably allotted to Rep & Opp, most time used
- 3 ☐ + short, apt and clear, well prioritized, time managed efficiently

## REVIEW OF REPORT

|   | report evaluation & understanding | pros & cons        | prioritisation |
|---|-----------------------------------|--------------------|----------------|
| 0 | poor/wrong                        | irrelevant         | no             |
| 1 | partial                           | partially relevant | some           |
| 2 | good                              | mostly adequate    | reasonable     |
| 3 | detailed, complex                 | fully adequate     | good           |

## REVIEW OF OPPOSITION

|   | speech evaluation    | pros & cons        | prioritisation |
|---|----------------------|--------------------|----------------|
| 0 | poor/wrong           | irrelevant         | no             |
| 1 | too short/long       | partially relevant | some           |
| 2 | informative, apt     | mostly adequate    | reasonable     |
| 3 | condensed & accurate | fully adequate     | good           |

## DISCUSSION ANALYSIS

|   | discussion evaluation | correct own opinions |
|---|-----------------------|----------------------|
| 0 | almost no             | too few              |
| 1 | too short/long        | some                 |
| 2 | relevant parts        | many                 |
| 3 | accurate, conclusive  | fully adequate       |

## MISSED POINTS POINTED OUT

- 1 ☐ irrelevant
- 0 ☒ none
- 1 ☐ relevant, constructive

## ANSWERS TO JURY QUESTIONS

- 0 ☒ concise and correct or no questions asked
- 1 ☐ some incorrect, inconclusive or too long
- 2 ☐ deeply incorrect or show deep misconceptions

## NOTES:

fiction

inconsistent air flow?