

# Jury meeting

## Martin Plesch

Nakhon Ratchasima, Thailand, 28<sup>th</sup> of June 2015

# The aim of this meeting

- Basic principles of judging
  - Recall for existing jurors
  - Introduce to new jurors
  - New: Introduce to team captains
- Principles for creating juries
  - Training for inexperienced jurors (training PF)

# Jury for IYPT 2015

- 27+18+2 experienced jurors
  - Jurors judging on IYPT in the past
- **20 new jurors**
  - Former participants, team leaders and observers
  - Local jurors
  - People completely new to IYPT

# Experience rule

- **New jurors must observe one fight before judging**
- **First fight**
  - 5-6 voting jurors plus 2-3 observers (all of us are in)
- **Observers make the full jury job including grading, but do not show the grades publicly**
  - Chair is asked to check, if the grades were assigned, **but there are not used**
  - This fight is used to provide a possibility for **calibration** for new jurors
- 6 jurors per fight in next fights

# Jury creation system

- Fully automated system – no human bias
- Many parameters taken into account
  - Nationality, conflict of interest
  - Repeating grading and chairing of the same team
  - Load of jurors (constant number of jurors per jury)
  - Team leader / independent juror ratio
  - Historical bias of individual jurors (2014)
- **We still need proper and consistent grading**
- **New jurors: calibrate in the first fight and keep calibration in next fights**

# Jury f

- Teams
- This is
- Will be
  - Conf
- Captai
  - Speci

## Jury Feedback Form for Room 3104, Fight 2

Team (underline your team): **Brazil, Czech Republic, Nigeria**

Captain's signature:

The jurors (including the chair) in this fight:

**Alan Allinson, Rok Capuder, Wen-Jer Tzeng, Massoud Torabi Azad, Narumon Suwonjandee, Lars Gislén, Ye Yeo**

Feedback for the Chair of the Jury:

| Name of the Chair:        | Excellent | Good | Average | Poor |
|---------------------------|-----------|------|---------|------|
| Time management           | ○         | ○    | ○       | ○    |
| Jury questions management | ○         | ○    | ○       | ○    |
| Overall performance       | ○         | ○    | ○       | ○    |
| Comments:                 |           |      |         |      |

Name up to 3 different jurors and grade them from Excellent=1 to Poor=5

| Juror Name | Questions | Explanations | Grading   | Comment |
|------------|-----------|--------------|-----------|---------|
|            | 1 2 3 4 5 | 1 2 3 4 5    | 1 2 3 4 5 |         |
|            | 1 2 3 4 5 | 1 2 3 4 5    | 1 2 3 4 5 |         |
|            | 1 2 3 4 5 | 1 2 3 4 5    | 1 2 3 4 5 |         |

This form is filled in on a voluntary basis by teams for each round and submitted to the IVPT office. Information will be used to provide statistical information about the perception of the appearance of individual jurors and chairs. If you cannot remember the full name of a juror, give us please a reasonable hint to identify him or her by stating the

# A bit of statistics

- Mean grading
  - Wished 5,5, 2014: 5,96, 2013: 5,99
- Std. deviation
  - Wished 1,5, 2014: 1,44, 2013: 1,32
- Almost no extremal jurors since 2013
  - Means 5,11 - 6,8 (2014) and 5,15 - 6,95 (2015)
  - Very experienced jurors cover the edges
  - As low as 3,44 in 2013 by a newcomer (!)

# Scoring Guidelines

Fight (Round no.): \_\_\_\_\_ Room: \_\_\_\_\_ Stage: \_\_\_\_\_ Problem no.: \_\_\_\_\_

Juror: \_\_\_\_\_ Signature: \_\_\_\_\_

## A report should include:

a presentation of the appropriate concepts, theories and principles of the problem an explanation of the observed phenomena an application of appropriate mathematics reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) linking of theoretical and experimental findings to draw suitable conclusions an attempt to communicate difficult or complex ideas in an effective and understandable manner

## An opposition should show that:

the opponent challenged the reporter's understanding of the presented concepts, theories and principles the opponent understood the appropriate mathematics presented the opponent critiqued the experimental technique used and questioned the validity of the data the opponent appreciated and highlighted the strengths and weaknesses of the report

## A review should show that:

the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) the reviewer's personal opinion was in evidence (not just superficial observations) such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: \_\_\_\_\_

Physics  $\pm 3$

- Correct and relevant physics
- Scientific approach
- Validity of conclusions
- Accurate answers

Presentation  $\pm 1$

- Clear and understandable
- Appropriate manner
- Overall impression

Reporter  $\pm 1$

- Quality of experimental technique(s)
- Structure
- Explanation of formulae and symbols
- Appropriate models, conformity of dimensions
- Slides, on-site experiments, audio, video, as appropriate
- References, proper citations of ideas and input of others
- Novelty of the report
- Contribution to the discussion

Final Grade: Reporter

Opp.: \_\_\_\_\_

Physics  $\pm 3$

- Correct and relevant physics
- Scientific approach
- Validity of conclusions
- Accurate answers

Presentation  $\pm 1$

- Clear and understandable
- Appropriate manner
- Overall impression

Opponent  $\pm 1$

- Response to the reporter's solution
- Shows the strong and weak points of the report
- Finds shortcomings or errors in the report
- Relevance of the questions
- Contribution to the discussion

Final Grade: Opponent

Rev.: \_\_\_\_\_

Physics  $\pm 3$

- Correct and relevant physics
- Scientific approach
- Validity of conclusions
- Accurate answers

Presentation  $\pm 1$

- Clear and understandable
- Appropriate manner
- Overall impression

Reviewer  $\pm 1$

- Provides a thorough review of report and discussion
- Expresses own opinion about topics presented or discussed
- Relevance of questions to both the reporter and the opponent
- Draws attention to points missed by the reporter or the opponent

Final Grade: Reviewer

# The aim of the guidelines

- Make **emphasis on physics** in all stages
- Reach good spread in grades
  - Especially by using low grades, too
- Consistent partial grades for Rep/Opp/Rev
- Give students a more valuable feedback
  - By forcing jurors to justify their grades
- Avoid large discrepancies among jurors

# Structure of the guidelines

- Standard performance for 5 points
  - Defined for report, opposition and review
- Adjustments for physics and presentation
  - The same structure for all roles
- Adjustments for specific roles

# “Standard” performance

- Aim is to give 5 points for performances reaching a “usual standard”
  - Something you would expect from a team from the midfield of the IYPT competition
- Add points for exceptional shows, subtract for errors or missing parts, concepts etc.
  - DO NOT subtract for (almost) impossible performance
  - **DO NOT weight on what “your team” has done**

# Report

- Appropriate *concepts, theories and principles*
- *Explained* the processes of the phenomena
- *Applied appropriate mathematics*
- Reasonable experimental technique to *gather and record data*
- *Linked theoretical and experimental findings*
- Drawn suitable *conclusions*

# Weight on the type of problem

- “Simple” **problem** (Circular light)
  - Clear and nice experiments with exact outcomes
  - Analytical solution or simulation based on analytical formulas
  - Agreement T-E with good precision and few (if any) parameters fitted
- Complicated **material problem** (Packing)
  - Nice experiments presented
  - At least qualitative or empirical theory
  - T-E comparison on the base of dependencies

# Opposition

- *Challenge of the Reporter's understanding* of the presented *concepts, theories and principles*
- Understanding of any ***appropriate mathematics*** presented
- Critique of the experimental technique used and question the validity of the data
- Presentation and discussion did highlight strengths and weaknesses in the report
- **Understanding of the report is essential**

# Weight on the presentation

- For good presentation, the opponent
  - Discusses the facts presented and expresses his/her opinions clearly
  - **Uses the time for presentation of statements**
- For poor presentation
  - Opponent brings also new ideas, questions to untouched parameters etc.
- **Discussion is not a question-answer game**
  - The opponent has to state his positions
  - **This is not presentation of own solution**

# Review

- ***Objective summary*** of the performances of **both** reporter and opponent.
- Important topics presented together with the Reviewer's ***personal non-trivial opinion***
- Demonstrated the understanding of presented ***concepts, theories, principles and any appropriate mathematics*** used
- **Understanding of the report and discussion is essential**

# Do not overvalue empty words

- “Nice presentation, good experiments, interesting theory” → **1 point**
- No phrases but clear statements
  - Experimental measurement of magnetic force was nice
  - Measurement of velocity was imprecise and biased
  - Theory for laminar flow is not suitable for this problem
- Opponent should also be reviewed
- Be **consistent** with **your judging** of the **presentation, opposition, discussion**

# Missing parts?

- Do not punish missing parts, if not appropriate
  - No answers if no questions
  - No praise if no reason
  - No quantitative theory-experiment link, if not possible for that particular problem
  - No understanding of math, if no math presented
  - Not mentioning your favorite pick in the problem, if other aspects were successfully researched
- In general, acknowledge good points and punish wrong ones rather than missing ones

# Complexness of the solutions

- **Students did spent months on solving the problems**
- Solutions might be very complex and deep
- There might be experimental data gathered by dozens of students
- It might be very hard for us to get the full solution within the physics fight

**Value high a complex and reasonable solution, if understood by the presenter and team**

**Communicate doubts about theory and/or understanding via questions and judge the answers**

# Filling out the guidelines

- Fill out the partial grades (decimals accepted) and final grade (rounded)
  - Round 0 points to 1, if that should happen
- Sheets will be collected, scanned and made available via the webpage
- Use partial grades if an explanation of your grading is demanded

# To chairs... to be consistent

- Keep the time very strict
- **Allow team work**
  - Answers to questions, short comments, passing of slips, performance of experiments etc.
- Performing team members need to be stated only on the beginning of their stage
  - Reviewing team can select their representative as late as during the discussion
- **Keep jury questions short and fair, do not hesitate to interfere**
- Filming is allowed for any of the teams (whole fight)

# To conclude

- Every juror has his/her own view
  - This is why we have more jurors in the jury
- But, we have to share common principles:
  - Physics
  - Understanding
  - Novelty