

Minutes of the IOC meeting, 2018-07-26 to 2018-07-27, Beijing, China

1) Opening

Martin Plesch (MP) opens the meeting at 9:45 and explains the policy on guests at the meeting. Certificates for some team leaders will be distributed during the meeting. IOC members from the following countries are present:

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|-------------|-------------------|-----------------|---------------|-----------------|
| 1. Austria | 6. China | 10. Hungary | 15. Poland | 20. Slovakia |
| 2. Belarus | 7. Chinese Taipei | 11. Iran | 16. Romania | 21. Switzerland |
| 3. Brazil | 8. Czech Republic | 12. Korea | 17. Russia | 22. Ukraine |
| 4. Bulgaria | | 13. New Zealand | 18. Singapore | 23. USA |
| 5. Canada | 9. Germany | 14. Pakistan | 19. Serbia | |

Furthermore, there are representatives present from Chile, Georgia, India, South Africa, Sweden, Thailand, Turkey and United Kingdom, the EC members and Assen Kyuldjiev as a guest.

The agenda is approved with minor changes.

2) Applications for IMO status and Renewal of IMO Status

MP introduces the applications to be voted on and expresses the EC's support for the applications from **Australia, Chile, Georgia, Sweden, Thailand, Turkey, United Kingdom and USA**. All applications are accepted by the IOC for 5 years each.

India is asked to submit an application by January 2019. IMOs decide who is representing them as their IOC member.

By adding IOC representatives from Chile, Georgia, Sweden, Thailand, Turkey and United Kingdom there are now 29 IOC members present.

3) Election of the General Secretary of IYPT

Elected Timotheus Hell, see the attached report of the election committee for details.

4) Election of 2 EC Members of IYPT

Elected John Balcombe and Samuel Byland, see the attached report of the election committee for details.

5) Election of 2 Auditors of IYPT

Elected Thomas Lindner and Kent Hogan, see the attached report of the election committee for details.)

6) Issues regarding IYPT(C) 2018

MP explains the different issues and how EC reacted to them. Different suggestions from IOC for mitigation of such problems in the future, however none of them seemed to be easily realizable.

7) Future IYPTs

IYPT 2019: There are requests that the date should not conflict with IPHO. The building is reserved from July 6th to 12th. The one-day-excursion depends on the finances, but the slot in the schedule shall be reserved. Currently the plan is based on the money from the teams and in-kind support from the hosting university.

IYPT 2020: No updates. **IOC votes to approve Romania as host.**

IYPT 2021: The US plans with a budget of about 500k USD and has not yet secured the funding. After a presentation, the **IOC votes in favor of accepting Pakistan as host**, inviting them to bring a detailed suggestion next year.

IYPT 2022: There are minor updates from Czech Republic and a bid from Korea to host IYPT in 2022 or later. **IOC votes in favor of inviting Czech Republic, Korea and the USA to present detailed bids** next year.

8) Executive Committee:

MP gives an update on the EC's work for the past year:

- Rules of Procedure for EC: As wished by IOC, the RoP were changed by adding: "In case a position in a committee falls vacant, the EC makes an open call for filling that position."
- Changes to PF & Chair guidelines are presented.
- Other current EC issues: Updates on IYPT corporate identity, IYPT support center in Slovakia

9) Motions for specific actions by EC/IOC Members

Motion by Andrei Klishin (Chile) to change the IYPT Regulations from "The IYPT is carried out in a period determined by the LOC (from May to July)." to "(...) June 15th to July 15th" (due to the academic schedule in the southern hemisphere). After some discussion the motion is withdrawn. **EC will take the arguments into consideration when negotiating the schedule with the LOCs.**

Motion by Florian Ostermaier (Germany) to change the IYPT Regulations: The schedule must either plan only one fight per day or speed up the fights by having the challenge before the break, have preparation time during the break or only have one break for groups of 4. After discussing several options, the motion is withdrawn. **EC will prepare suggestions to be voted on in the next IOC meeting.**

Motion by Kundracik František (Slovakia) to change the IYPT Regulations: Set the number of problems that can be rejected without penalization to 5. A 2/3 majority is needed in order to change the regulations, i.e. 18 votes of 26. With 14 in favor, 8 against and 3 abstaining the motion does not pass.

10) Photography and videography

Photography and videography permissions during physics fights 1 to 4 and a clarification on roles played by photographers and videographers in relation to team affiliation is discussed. Apparently taking photos was not just used to promote IYPT but to take photos of all slides from teams like Singapore, e.g. by the local volunteers. This led to mistrust. The proposal is that permissions from all participating teams must be sought, and only persons associated with the teams are allowed to take photos and videos. On the other hand, material is needed for training teams in the future and to promote the IYPT. Depending on the country, laws regulate that taking photos needs explicit consent anyway.

After the discussion, the following motion is put forward and passes: **Only the participating teams (team members and team leaders) and jurors of a fight and designated organizers are allowed take photos and videos during fights 1-4.**

11) Report of the Treasurer:

Financial year 2016/2017, endorsement of auditors: After a presentation by Ilya Martchenko (IM), John Balcombe (JB) points out that about 6 weeks instead of only a few days would be preferable for the auditors to get the documentation, this was already discussed before and IM is asked to in the future provide the documents much earlier. The report was already done in February and sent to the EC, but IM overlooked to send it to the auditors. Thomas Lindner (TL) asked for some supporting documentation, but his request was not received by IM. All documentation can and will be provided, and **the report will be endorsed by the auditors once that has happened.** Budget 2017/2018, report: IM reports that the EC made several amendments in their November meeting. Budget 2018/2019, approval: IM presents the budget, which was discussed and agreed upon by the EC during their last meeting in November. IM failed to send the budget to the IOC, IOC members did not have time to study it. **The Budget is not approved by the IOC. EC is asked to provide an updated budget and have IOC vote on it via email.** A motion to issue a warning to be permanently recorded to IM for not delivering timely the financial documents for IOC review does not pass.

12) Report of the head of the Jury Committee:

MP reports on the JC's activities, including travel support for experienced jurors, feedback on jurors and updates to the scoresheet.

13) Suggestions regarding Grading and the Jury (Dina Izadi, Iran)

Judges are asked if they are tired and replaced by those who are fresh enough and the number of judges per country (except host) should be limited: Timotheus Hell (TH) explains that there are currently not enough jurors to do this. Overall local jurors also get worse feedback, so increasing their number is not the best solution either.

Scores in each physics fight should be kept secret to prevent judging in advance: **EC will think of a way to do this, possibly only for the finals.**

14) Report of the head of the Disciplinary Committee

New RoP were passed and are presented by Qian Sun (QS), they are available on the website. No cases were brought to the DC during this year's competition.

15) Report of the head of the Committee for Problems Selection

Samuel Byland reports on the work done by the Committee for Problems Selection.

16) Approval of the set of problems

The IOC does not immediately approve the proposed set of problems, each problem is therefore discussed and voted on. TH takes over chairing the meeting from MP.

Problems 1-5, 7-12, 14, 16, 17 are accepted, some with minor changes that are reflected in the published set of problems. Problems 6, 13, 15 do not get a (clear) majority. Problem 13 is discussed again and does not reach a majority. Gyroscope Teslameter, Flat self-assembly and Suspended Water Wheel are voted in as substitutes with minor adjustments. See the attachment for the final version of 2019's IYPT Problems.

TH closes the meeting at 21:30 on 2018-07-27

Minutes prepared by TH and approved by MP.



International Young Physicists' Tournament

Election Committee Report 2018



1. Introduction

Since the terms of Timotheus Hell as IYPT Secretary General, Samuel Byland and Qian Sun as IYPT EC members and John Balcombe and Thomas Lindner as IYPT Auditors will end on 31 October 2018, elections for the five respective positions had to be added to the agenda (item 3) of the IOC meeting taking place in Beijing on July 26th 2018.

The election followed the EC Rules of Procedures (RoP) for elections from April 2016.

2. Election Committee

IYPT President Martin Plesch has formed an election committee in order to organize the election. Eric Schertenleib and Márcio Martino agreed to join Martin Plesch in the election committee.

3. Call for candidates

IOC members were informed by email about the upcoming elections on May 31st 2018. According to the RoP for elections, the deadline for nominations was set to July 24th 2018; 08:00 Beijing time. Final list of nomination has been announced to the IOC on July 25th.

Before the deadline, one nomination for IYPT Secretary General (Timotheus Hell, TH, nominated by František Kundracik), three nominations for IYPT EC members (Andrei Klishin, AK, nom. by Andrei Klishin; Samuel Byland, SB, nom. by Eric Schertenleib; Assen Kyuldjiev, AsKy, nom. by Mladen Matev) and two nominations for IYPT Auditors (John Balcombe, JB, nom. by František Kundracik; Thomas Lindner, ThLi, nom. by Julian Ronacher) were received and accepted by the candidates. One nomination for EC member (John Balcombe, JB, nom. by Eric Schertenleib) has been received after the deadline.

4. Scrutineers

At the IOC meeting on July 26th Kent Hogan and Stanislav Panoš were appointed as scrutineers by the IOC.

5. Presentation of candidates for IYPT Secretary General

The candidate for IYPT Secretary General presented himself and his vision for the IYPT. IOC members were given the opportunity to ask questions to the candidates.

6. Election of IYPT Secretary General (results)

Total number of voting IOC members: 29

round 1: TH 29

Timotheus Hell elected as IYPT Secretary General for the next regular term (i.e. 1st November 2018 till 31st October 2022).

7. Presentation of candidates for IYPT EC members (2 positions)

The candidates for IYPT EC members presented themselves and their ideas of the role. IOC members were given the opportunity to ask questions to the candidates. The IOC and individually all the candidates agreed with accepting JB as a candidate for EC member despite applying after deadline.

8. Election of IYPT EC members (2 positions, results)

Total number of voting IOC members: 29

round 1: SB: 22, JB: 22, AK: 6, AsKy: 7

Samuel Byland and John Balcombe were elected as members of IYPT EC for the next regular term (i.e. 1st November 2018 till 31st October 2022).

9. Presentation of candidates for IYPT Auditor (2 positions)

As JB was elected for an EC member, Kent Hogan (KH) was nominated ad hoc for the position of an IYPT Auditor.

10. Election of IYPT Auditor (2 positions, results)

Total number of voting IOC members: 29

round 1: TL: 29, KH: 29

Thomas Lindner and Kent Hogan were elected as members of IYPT Auditors for the next regular term (i.e. 1st November 2018 till 31st October 2022).

11. Concluding remarks

The election committee wishes all the best to Tim, Samuel, John, Thomas and Kent in their respective roles.

Beijing, China, July 28th 2018

For the election committee: Martin Plesch

Problems for the 32nd IYPT 2019

Released by the IOC on July 26th, 2018

1. Invent Yourself

Build a simple motor whose propulsion is based on corona discharge. Investigate how the rotor's motion depends on relevant parameters and optimize your design for maximum speed at a fixed input voltage.

2. Aerosol

When water flows through a small aperture, an aerosol may be formed. Investigate the parameters that determine whether an aerosol is formed rather than a jet for example. What are the properties of the aerosol?

3. Undertone Sound

Allow a tuning fork or another simple oscillator to vibrate against a sheet of paper with a weak contact between them. The frequency of the resulting sound can have a lower frequency than the tuning fork's fundamental frequency. Investigate this phenomenon.

4. Funnel and Ball

A light ball (e.g. ping-pong ball) can be picked up with a funnel by blowing air through it. Explain the phenomenon and investigate the relevant parameters.

5. Filling Up a Bottle

When a vertical water jet enters a bottle, sound may be produced, and, as the bottle is filled up, the properties of the sound may change. Investigate how relevant parameters of the system such as speed and dimensions of the jet, size and shape of the bottle or water temperature affect the sound.

6. Hurricane Balls

Two steel balls that are joined together can be spun at incredibly high frequency by first spinning them by hand and then blowing on them through a tube, e.g. a drinking straw. Explain and investigate this phenomenon.

7. Loud Voices

A simple cone-shaped or horn-shaped object can be used to optimise the transfer of the human voice to a remote listener. Investigate how the resulting acoustic output depends on relevant parameters such as the shape, size, and material of the cone.

8. Sci-Fi Sound

Tapping a helical spring can make a sound like a "laser shot" in a science-fiction movie. Investigate and explain this phenomenon.

9. Soy Sauce Optics

Using a laser beam passing through a thin layer (about 200 μm) of soy sauce the thermal lens effect can be observed. Investigate this phenomenon.

10. Suspended Water Wheel

Carefully place a light object, such as a Styrofoam disk, near the edge of a water jet aiming upwards. Under certain conditions, the object will start to spin while being suspended. Investigate this phenomenon and its stability to external perturbations.

11. Flat Self-Assembly

Put a number of identical hard regular-shaped particles in a flat layer on top of a vibrating plate. Depending on the number of particles per unit area, they may or may not form an ordered crystal-like structure. Investigate the phenomenon.

12. Gyroscope Teslameter

A spinning gyroscope made from a conducting, but non-ferromagnetic material slows down when placed in a magnetic field. Investigate how the deceleration depends on relevant parameters.

13. Moiré Thread Counter

When a pattern of closely spaced non-intersecting lines (with transparent gaps in between) is overlaid on a piece of woven fabric, characteristic moiré fringes may be observed. Design an overlay that allows you to measure the thread count of the fabric. Determine the accuracy for simple fabrics (e.g. linen) and investigate if the method is reliable for more complex fabrics (e.g. denim or Oxford cloth).

14. Looping Pendulum

Connect two loads, one heavy and one light, with a string over a horizontal rod and lift up the heavy load by pulling down the light one. Release the light load and it will sweep around the rod, keeping the heavy load from falling to the ground. Investigate this phenomenon.

15. Newton's Cradle

The oscillations of a Newton's cradle will gradually decay until the spheres come to rest. Investigate how the rate of decay of a Newton's cradle depends on relevant parameters such as the number, material, and alignment of the spheres.

16. Sinking Bubbles

When a container of liquid (e.g. water) oscillates vertically, it is possible that bubbles in the liquid move downwards instead of rising. Investigate this phenomenon.

17. Popsicle Chain Reaction

Wooden popsicle sticks can be joined together by slightly bending each of them so that they interlock in a so-called "cobra weave" chain. When such a chain has one of its ends released, the sticks rapidly dislodge, and a wave front travels along the chain. Investigate the phenomenon.

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Problem selection committee: John Balcombe, Samuel Byland, Ilya Martchenko