19 International Physics Olympiad 2016

Summary from L. Philippoz

The International Physics Olympiad (IPhO) is an annual competition for high-school students, which takes place every year in a different country. Each delegation can send a team of up to five students which will then compete individually in theoretical as well as in experimental problems. Teams from Switzerland participate since 1995. In July 2016, the 47th IPhO was jointly organized by the UZH, with the dedicated support of the Physics Department, the ASSO (Association of the Swiss Scientific Olympiads), and the Office of Education of the Principality of Liechtenstein. Many members of the organization committee also came from the SwissPhO, the association in charge of organizing the national selection in Switzerland. In total, 84 countries took part in the competition, with 398 students (unfortunately only 25 of them being female), 161 leaders and 84 observers.

19.1 Competition

The competition always follows the same scheme: After the opening ceremony, with the introduction of all the delegations and the official opening of the competition, the experimental problems are presented to the leaders. In the following discussion session, the leaders may still propose changes to the problems before they are translated into the languages of the participating countries. The five-hour experimental exam then takes place the following day. The procedure for the theoretical exam is similar. The exams are then corrected and marked independently by the official markers (from our department for the IPhO 2016) and the team leaders. Afterwards the leaders discuss the grades with the markers in the moderation session to establish the final ranking announced during the closing ceremony. While the organizers are free to present one to two tasks for the experimental exam, four problems are prepared for the theoretical exam, one of which is chosen as backup.

19.2 Role of the Physics Department

19.2.1 Preparation of the problems

Besides all the logistical aspects of the event, the core of the success of the IPhO relies on the quality of the exam questions. The first meetings to gather ideas about possible topics already started back in mid 2014, within a small group. The combined experience from SwissPhO members, knowing the requirements for IPhO problems, and researchers from the Physics Department, able to give insights into modern research topics, allowed to prepare attractive theoretical and experimental problems. For the latter, more than 200 setups were produced with the help of the mechanical and electronics workshops.

19.2.2 Marking and moderation

The fundamental task of marking the problems of all the participants could only be achieved thanks to the strong engagement of the members of the Physics Department at all levels: professors, post-docs and PhD students were all part of the marking team. A total of 89 markers managed to finish the marking within the limited time - including night shifts - and successfully negotiated the results with the leaders the next day. The feedback from the leaders was very positive, their vast majority had never experienced such a smooth moderation session.

19.3 Conclusion

In the end, IPhO 2016 was a big success. It is difficult to compare various editions due to the specificities of each organizing country, but the general feeling and consensus was that the 2016 edition counts amongst the best ones. Of course, we all had to deal with unexpected issues which are unavoidable in an event of that scale, but they could all be solved. The involvement of everyone, but especially of all the members of the Physics Department at all levels - academic staff, administrative staff and workshops - was the fundament for this overall success, so as a conclusion: Thank you again!

FIG. 19.1 – Closing ceremony with the gold medal winners.