

# ***Introduction***

The International Young Physicists' Tournament (abbr.: IYPT) is a competition among secondary high school students from all over the world. It is unfortunately, especially in Austria, not as well known as other students' competitions, for example the Physics Olympics or the Mathematics Olympics. That is perhaps due to the fact that the IYPT is very different from other competitions. Strictly speaking it is hardly comparable with them.

Many other competitions are competitions among single students. For example at the Mathematics Olympics students work for a few hours on problems which they never saw before and try to solve them within a short time without any help. So that's possibly comparable to a maths test.

In contrast to this the IYPT is a competition among teams of students. And that is one of the most remarkable qualities of the IYPT: The students have to learn to interact and cooperate within their team in order to succeed.

Moreover the IYPT does not confront the teams with problems they are not already familiar with. The problems are formulated and published at least 6 months before the tournament starts. That is because usual IYPT problems are not designed to be solved within a few hours and without any help. Most of the problems are about phenomena with which we are confronted in our everyday lives, but that does not necessarily mean that they are simple to explain. Sometimes it is quite impossible to find a complete solution to a problem.

So when trying to solve an IYPT problem the usual procedure is to do experiments on the problems and try to find out which parameters influence the phenomenon, to consider information from literature, to talk to some experts, to outline theories and models, to sum all that up and to prepare a presentation for the tournament.

So the actual major part of the work is to prepare for the tournament, at which the teams discuss their solutions in so-called physics fights. Normally there are 3 teams in one physics fight. One team is the reporter team, which presents its solution to the problem challenged by the opponent team. The opponent then criticises this solution and tries to find the positive and negative aspects of the presentation. Then these two teams may discuss the report and the criticism. Afterwards the third team, the so-called reviewer team, sums up the positive and negative aspects of the job which both other teams have done. Then a jury gives

the grading for all teams and the rolls of the teams change until each team did each task: reporting, opposing and reviewing.

So the challenge of the IYPT is not only to prepare a scientifically good and correct solution, but also to present this solution in a proper way and to react spontaneously to criticism and the solutions of the other teams respectively.

So during the preparation you should not only focus on how to present your own solution. You should also anticipate possible solutions and weaknesses of other teams. Moreover you should be prepared to react on critical arguments as well.

Another difficulty of the competition is that, due to the fact that the competitors come from all over the world, the whole tournament is held in English. So the IYPT also challenges language competence and the linguistic skills of the competing students. Sometimes it is not very easy to translate technical terms, because most of them are not listed in the dictionary, neither known by “normal” English teachers, nor by physics teachers.

This quick overview should have given you an idea what the IYPT is like. The following chapters will present more detailed information about:

- The regulations and the structure of an IYPT
- Personal experiences with the IYPT
- Problems and solutions from the IYPT 1999 and 2000
- Solution approaches
- Opinions about the IYPT
- Tips for beginners
- Contact addresses
- Background information and more...

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