

# **The Regulations of the Austrian Young Physicists' Tournament**

## **I. Austrian Young Physicists' Tournament**

The Austrian Young Physicists' Tournament (AYPT) is a competition among teams of secondary school students in their ability to solve complicated scientific problems, to present solutions to these problems in a convincing form and to defend them in scientific discussions, called Physics Fights (PF). It is carried out by the association "AYPT – Forschungsforum junger Physiker" according to the articles of association, appendix A. The Organizing Committee for the AYPT is selected by the Executive Committee of the association.

## **II. The problems of the AYPT**

The problems of the AYPT will be the same as for the IYPT (International Young Physicists' Tournament), in accordance with Article II of the Regulations of the International Young Physicists' Tournament.

## **III. The participants of the AYPT**

### *1. The Austrian teams*

Any team composed of students enrolled in Austrian secondary schools is eligible for participation.

### *2. Foreign teams*

The Organizing Committee may invite any number of foreign teams. Those teams compete in the same way as the others but they are not taken into account when compiling the Austrian National Team (see Section XIV).

### *3. The membership of the teams*

The AYPT team is composed of three secondary school students. The secondary school graduates could participate in the AYPT in the year of their graduation. The participation of university students is not allowed. The composition of the team cannot be changed during the Tournament. The team is headed by a captain who is the official representative of the team during the PF.

### *4. Team Leader*

The team is accompanied by a team leader.

## **IV. The Jury**

The Jury is nominated and organized by the Organizing Committee. The Jury consists of at least five members. Team leaders may be included in the Jury. The team leaders cannot be

members of the Jury in the PF where their teams participate and should not, if possible, grade the same team more than twice.

## V. The agenda of the AYPT

The AYPT is carried out in a period determined by the Organizing Committee. All teams participate in the Selective PFs. Selective PFs are carried out according to a special schedule determined by the Organizing Committee according to the number of participating teams, following the rule that, if possible, no team meets another team more than twice. This schedule should be known before numbers are ascribed to the teams by lot. The best teams participate in the Final PF.

## VI. The Physics Fight regulations

Three or four teams participate in a PF, depending on the total number of teams. In the course of a PF the members of a team communicate only with each other.

Before the beginning of a PF, the Jury and the teams are introduced.

The PF is carried out in three (or four) Stages. In each Stage, a team plays one of the three (four) roles: Reporter, Opponent, Reviewer (Observer). In the subsequent Stages of the PF, the teams change their roles according to the schemes:

### *Three teams PF*

Stage	1	2	3
Team 1	Rep	Rev	Opp
Team 2	Opp	Rep	Rev
Team 3	Rev	Opp	Rep

### *Four teams PF*

Stage	1	2	3	4
Team 1	Rep	Obs	Rev	Opp
Team 2	Opp	Rep	Obs	Rev
Team 3	Rev	Opp	Rep	Obs
Team 4	Obs	Rev	Opp	Rep

## VII. The Stage regulations

The performance order in the Stage of a PF: Reserved time in minutes

The Opponent challenges the Reporter for the problem . . . . .	1
Preparation of the Reporter . . . . .	5
Presentation of the report . . . . .	12
Questions of the Opponent to the Reporter and answers of the Reporter . . . . .	2
Preparation of the Opponent . . . . .	3
The Opponent takes the floor, maximum 4 min. and discussion between the Reporter and the Opponent . . . . .	14
The Opponent summarizes the discussion . . . . .	1
Questions of the Reviewer to the Reporter	

and the Opponent and answers to the questions . . . . .	3
Preparation of the Reviewer . . . . .	2
The Reviewer takes the floor . . . . .	4
Concluding remarks of the Reporter . . . . .	2
Questions of the Jury . . . . .	5

In the Final PF the procedure of challenge is omitted.

The official language of the AYPT is English.

## VIII. The team performance in the Stages

**The Reporter** presents the essence of the solution to the problem, attracting the attention of the audience to the main physical ideas and conclusions.

**The Opponent** puts questions to the Reporter and criticizes the report, pointing to possible inaccuracy and errors in the understanding of the problem and in the solution. The Opponent analyses the advantages and drawbacks of both the solution and the presentation of the Reporter. The discussion of the Opponent should not become a presentation of his/her own solution. In the discussion, the solution presented by the Reporter is discussed.

**The Reviewer** presents a short estimation of the presentations of Reporter and Opponent.

**The Observer** does not participate actively in the PF.

During one PF only one member of a team takes the floor as Reporter, Opponent or Reviewer; other members of the team are allowed to make brief remarks or to help with the presentation technically. During the Final PF each team member must take the floor exactly once.

## IX. The rules of problem selection and challenge

### 1. Preparation

Prior to the Tournament, each single participant prepares a report on one of the problems and publicly announces their choice during the opening ceremony. Thereby, the problem is assigned to the individual participant for the course of the Tournament. In the following, the chosen problem will be referred to as the participant's *assigned problem*. Within a team, no two team members may have the same assigned problem.

### 2. Selective PF

The Opponent may challenge the Reporter on any of the problems assigned to a member of the Reporter team that the Reporter team has not presented before. The team member whose assigned problem is challenged has to accept the challenge and act as Reporter in this stage.

If possible, the Opponent must challenge a problem which has not already been presented in the same PF.

### 3. Final PF

In the Final PF, teams choose which of their three assigned problems they wish to present again. All problems presented in the Final PF have to be different. In case teams choose the same problem, priority of selecting problems for the Final is determined by the TSP (see section XI), in case of equality by lot.

All teams hand in a prioritization of their assigned problems before they leave the fight room at the end of the last Selective PF. After the results of the Selective PFs are known, the choice of the teams participating in the Final is published immediately.

## **X. The grading**

After each stage the Jury grades the teams, taking into account all presentations of the members of the team, questions and answers to the questions, and participation in the discussion. Each Jury member shows integer marks from 1 to 10. The mean of the highest and the lowest marks is counted as one mark which is then added to the remaining marks. This sum is used to calculate the mean mark for the team. The mean marks are multiplied by various coefficients: 3.0 for the Reporter, 2.0 for the Opponent, 1.0 for the Reviewer and then transformed into points.

In the Final, grading is done in secret. Jurors write down their grades on the grading sheets, sign them, and give them to the Final's Fight Assistants. The Chair asks the jurors of the highest and lowest grades to justify and explain their grades. This is done without mentioning the actual grade. The results are kept secret until they are officially announced during the award ceremony. After the announcement, all grading sheets and the detailed results are published online so that anyone can check the result.

## **XI. The resulting parameters**

### *1. For a team in the PF*

The sum of points ( $SP$ ) is the sum of mean marks, multiplied by the corresponding coefficients and rounded to one decimal.

### *2. For a team in the Tournament*

The total sum of points ( $TSP$ ) equals the sum of  $SP$  of the team in all Selective PFs.

## **XII. The Final**

The three teams having the highest TSP in the Selective PFs participate in the Final. In case teams have equal TSP, their participation in the Final is decided by which team won more Selective PFs, in case of equality by lot.

The order of presentation in the Final is determined by position by entering the Final: the higher the *position*, the higher the number in the scheme of section VI.

## **XIII. The final team ranking of the AYPT**

The winner of the Final obtains the 1<sup>st</sup> place. If two or three teams have the same SP result in the final, the winner is nominated according to the highest TSP. The other two teams participating in the Final share the 2<sup>nd</sup> place. For teams not participating in the Final, the

Organizing Committee decides, according to the TSP obtained, which teams will share the 3<sup>rd</sup> place.

#### **XIV. Compiling the Austrian National Team**

After the end of the AYPT the decision about the composition of the Austrian national team is made according to the procedure outlined in appendix A of the articles of association.

#### **XV. The status of the regulations of the AYPT**

The regulations are established by the Executive Committee of the association and may be changed only by the Executive Committee.

*Accepted by email, 2016-08-24*