

30<sup>th</sup> Annual Conference of Doctoral Students

# WDS'21

“WEEK OF DOCTORAL STUDENTS 2021”

FACULTY OF MATHEMATICS AND PHYSICS  
CHARLES UNIVERSITY  
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## Physics

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## PREFACE

Due to the COVID-19 pandemic, the anniversary 30<sup>th</sup> Annual Conference of Doctoral Students was slightly postponed and was held in Prague, at the Charles University, Faculty of Mathematics and Physics from June 15 to 17, 2021 as a hybrid meeting. The oral talks were presented online but the poster section took place as a live event. In this year, 81 students of physics study branches have registered as active participants to the meeting. The traditional WDS Proceedings is compiled from 19 student manuscripts finally accepted (from 22 originally submitted) for publication in this difficult year.

All submitted manuscripts were reviewed by two referees because we believe that it helps students to learn how to prepare the written presentation of their results in a foreign language and how to respond the referee's notices. They should take into account their comments and prepare a new submission including letters to referees where they explain their reaction and this format is a standard publication procedure in scientific journals. In our concept, one of referees is a doctoral student, thus he/she can learn review writing, which is the knowledge they will need in the future. The subject of the paper under review is often slightly different from his/her field of research, so the student's referees should investigate a new problem and another style of writing. They can see that a good and comprehensive review is sometimes a very difficult task. Therefore, a level of student's reports is often different — from a formal review only to precise reports with a number of comments and suggestions.

The second referee is selected from the experienced senior researchers and, in this year, their list includes over 33 % of foreign experts because they feel the importance of such a method of teaching. We would like to express many thanks to all of 45 referees for the understanding and great help. Their effort significantly contributed to a traditionally good quality of the Proceedings and you can find over 830 citations to articles published in previous volumes in the database of Web of Science.

### **Editors thank to following referees:**

B. Alterman, P. Barton, M. Belda, B. Bezdekova, G. S. Bisnovatyi-Kogan, M. Cada, J. Cerny, T. Davidek, K. Dhib, J. Dolezal, P. Hadrava, M. Hanzelka, R. Hippler, P. Huszar, M. Chval, P. Jusko, A. Kapran, J. Karlicky, Y. Katoh, I. Kolmasova, A. Kovalenko, A. Lukin, M. S. Madjarska, J. Markova, J. Marounova, H. Mishra, D. Mulin, V. F. Myshkin, F. Nemeč, C. Norgren, J. Palacky, M. Rudolph, M. Setvin, Y. Shen, K. Shilenje, J. Skorepa, V. Stranak, M. Sykora, R. Taverna, Z. Turek, L. Uvarova, O. Vlcek, K. Vokurka, A. Yilmaz, and M. Zak.



Finally, we would like to express our thanks to all speakers and other participants for helping us to keep a fruitful and friendly atmosphere during the whole meeting as the photo from the joint poster session in a faculty atrium also demonstrates. Last but not least, we would like to thank our colleagues and many cooperative students who assisted us greatly both prior to and through the conference.

**Pleasant reading**

Jana Šafránková and Jiří Pavlů  
Editors