

PREFACE

Our conference has been organized since 1975 by the Department of Theoretical Physics of the University of Silesia in Katowice, Poland. Formerly, they had the form of schools yet since 2003 their character has become that of a conference or even workshop. Previous conferences took place in Szczyrk, Żywiec, Ustroń, places in the Beskidy Mountains in the South of Poland; in Podlesice, some 80 km north of Katowice, a picturesque village situated in the Eagles' Nests Landscape Park and the Jurassic Cycling Eagles' Trail, and recently in Chorzów and Katowice. Last time, in 2021, due to the Covid-19 pandemic we organized the conference online.

This time, the conference has been organized in a hybrid mode from the 17th to the 22nd September, 2023 again in Ustroń, with all talks on the site by the Institute of Physics, University of Silesia, in cooperation with the Physics of Fundamental Interactions Section of the Polish Physical Society.

We were glad to see specialists both in theoretical and experimental particle physics, who presented the most recent developments in their fields. Altogether, we had 11 online registrants and 57 on-site participants. 44 (in-person) talks were presented, some of them delivered by Ph.D. students and postdocs.

The talks covered a broad spectrum of physical problems connected with

- (i) Precision tests of the Standard Model;
- (ii) Low energy physics;
- (iii) Methods in multi-loop calculations;
- (iv) Extensions of the Standard Model;
- (v) Neutrinos, astrophysics and cosmology.

Such a broad spectrum of subjects is one of the characteristic features of this conference. We have a feeling that it was an interesting mixture, where many different views on frontiers in Particle Physics and Astrophysics have been presented and discussed. What was new, after each session, we had time for an overall discussion and questions about the presented talks. We think it was a very good idea to give additional insight into the presented topics. We hope that it was also the overall impression of the majority of the participants.

We also enjoyed an outreach talk on *Search for Technological Interstellar Objects* by prof. Avi Loeb.

Due to the variety of topics presented at the conference, we thank the speakers for their effort in preparing talks that are interesting to all audiences. We are especially grateful to those who found time to prepare their contributions for publishing in these proceedings. We also thank the chairpersons of the sessions: Andrzej Siódmok, Richard Ruiz, Thomas Gajdosik, Frank Deppisch, Arunansu Sil, Evgeny Akhmedov, Claudia Hagedorn, Stefan Weinzierl, and Wiesław Płaczek.

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