

Preface

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SoUP (School of Underground Physics) is the first INFN School dedicated to Underground Physics topics: physics case, detectors and instrumentation. Its first edition was planned for summer 2020 in Cagliari, but it was then cancelled due to the COVID-19 pandemic.

The 2021 edition has then been converted to an online school, with about a hundred of students attending from all over the world. We underline the very important synergy with the African School of Fundamental Physics and Applications which fostered the attendance of Students from Africa to SoUP.

The programme covered various topics in Astroparticle Physics as Phenomenology of Neutrinos and Dark Matter. It also included many lectures on the various experimental techniques: Noble Liquid and Solid State detectors, with dedicated sessions to the Cryogenic systems involved, New Photon sensors and their Readout, Material Screening. Finally, we also covered Statistics and Monte Carlo simulations, with a special Hands-On session where students could face and solve a simplified but real problem coming from one experiment for rare event search.

We wish to thank all the lecturers for the careful preparation of their material, and the availability in the discussion sessions that concluded each day, where students had the opportunity to make questions and discuss any doubt directly with the experts.

We also had an online poster session, helped with new media to allow social interactions among presenters and attendees, with about 50 presented posters. We provided the opportunity to prepare proceedings with the content of the posters, that are now collected in this volume.

Finally, we would like to thank the members of the Program Advisory and Scientific Program Committees for their support in planning the Lectures.

We wish also to thank the Local Organizing Committee for their precious help in organising the School and for their flexibility in modifying it for the online version.