

Preface

VLVvT 2018 has been the 8th edition of a series of biannual workshops on Very Large Neutrino Telescopes, the first in Amsterdam (2003), the previous one in Rome (2015). The 3-year gap between 2015 and 2018 was chosen to run into less conflicts with larger conferences of the neutrino and cosmic-ray community.

Uli Katz, in his concluding remarks at the end of this volume, sketches the impressive development which our field took since 2003 and also throws a glance into the future. In 2003, IceCube had not even deployed a single of its 86 strings. It would take seven years to complete IceCube in 2010, and another three years to make the first clear discovery – a diffuse flux of high-energy extraterrestrial neutrinos. This result convinced even sceptics that building similar detectors on the Northern hemisphere would not be a waste of money and that the optimism of the KM3NeT and GVD community was justified. Five years later, shortly before VLVvT 2018, the IceCube collaboration announced the evidence for a blazar as an individual neutrino point source. This is another encouraging step towards mapping the neutrino sky. At the same time, Baikal-GVD had deployed almost 900 optical modules and KM3NeT its first strings, after already KM3NeT's predecessor ANTARES – although too small to compete with IceCube – had delivered high-quality results.

Within the Global Neutrino Network GNN, the cooperation between the different experiments has steadily developed. Common analyses, mutual cross checks of results, combination of skymaps (thereby significantly enhanced sensitivity in the overlapping sky regions), common alert programs or just the exchange of methods and software are impressing examples. Several of them are reflected in this volume.

As time moves on, the production of printed proceedings becomes less and less popular and, given the modern methods of information dissemination, even less appropriate. Therefore one can reasonably assume that this is the last printed proceedings volume of the VLNVt series. But of course not the last VLNVt workshop! On the contrary, the results to be expected from IceCube, KM3NeT and Baikal-GVD let me already now look curiously forward to the 2020 meeting.

This Workshop has been organized in plenary and parallel sessions. For these proceedings I have re-arranged the papers in a way which, better than the original session structure, orders them by content. The plenary talks included in this volume are 01001-01005, 02001, 02002, 04001, 04002 and 10001. We enjoyed a considerable number of talks from outside the GNN community, ranging from gamma-ray and gravitational-wave astronomy and cosmic-ray results to direct dark matter detection or sterile neutrino search at reactors. These “framing talks” have been very important to make this conference a success. Most of them are not included in these proceedings, but the slides can be found at the conference webpage <https://vlvnt2018.jinr.ru/timetable/>.

I would like to thank the members of the advisory committee for helping to compose a very interesting program. I also want to thank JINR Dubna, the International Union of Pure and Applied Physics, and Hamamatsu Photonics for their financial support, and the Dubna group for the excellent organisation. Vladimir Rushay composed the VLVvT webpage and was also of great help in collecting the contributions to this volume.

Christian Spiering