

E. Bernardini¹, M. Mezzetto², P. Salente², C. Sirignano¹

Conclusions

The XX International Workshop on Neutrino Telescopes concluded, held from October 23 to 27, 2023, thirty-five years after the first edition, at the Palazzo Franchetti and Palazzo Loredan, magnificent venues of the Veneto Institute of Sciences, Letters, and Arts overlooking the enchanting Grand Canal in Venice.

This year, the event adopted a modified format by introducing, in addition to exclusively invitational plenary reviews, thematic parallel sessions and a session of flash talks, both based on author proposals. This innovation facilitated extensive discussion and in-depth exploration of both experimental and theoretical topics, involving the active participation of young researchers. The flash talks session was particularly successful, thanks to the engaged involvement of invited speakers in the two discussion sessions.

In total, 30 plenary talks, 76 parallel talks, and 11 flash talks were presented. Following tradition, the conference focused on neutrino properties and their role in astroparticle research. The conference highlighted a strong inclination towards future ambitious neutrino experiments at accelerators and reactors, such as Hyper-Kamiokande, DUNE, JUNO, etc., with significant astroparticle implications. Numerous initiatives for the realization of neutrino telescopes (Ice-Cube Gen2, KM3NeT, P-ONE, TRIDENT, to name a few) were discussed, along with the exploration of new observational techniques like TRINITY and RNO-G.

The program included reviews of exploratory cosmology experiments, such as the recent success of the Euclid launch and the Einstein Telescope project. The intense activity on these initiatives was presented through numerous talks, emphasizing the hardware, software, and theoretical contributions essential for their realization, demonstrating the broad spectrum of future developments in the field.

Approximately 160 scientists from the global academic community and major international research laboratories participated in the Workshop. The attendance featured a notable representation of women scientists, accounting for about 35%, and a significant international component, with approximately 70% of participants being foreign.

While contributions remotely submitted were limited in number, they were seamlessly integrated into the program with the technical support provided by the Veneto Institute and the Department of Physics and Astronomy at the University of Padua.

The inaugural day's events are available on the Department of Physics and Astronomy's YouTube channel at the following link: https://youtu.be/t_9s2ALOFGQ.

Alongside the workshop, the customary moment of cultural reflection, a longstanding tradition of this conference, was not omitted. This year, space was given to the theatrical representation "La Forza Nascosta," a production curated by female physicists, narrating the personal stories of four prominent female scientists from the 20th century: Marietta Blau, Chien-Shiung Wu, Milla Baldo Ceolin, and Vera Cooper Rubin.

The Workshop was co-organized by the INFN Section of Padova and the Department of Physics and Astronomy at the University of Padova, with the patronage of the University of Padova and the sponsorship of two major companies, CAEN and Hamamatsu.

For further details, please refer to the conference website: <https://agenda.infn.it/event>

- 1) *University of Padova and INFN*
- 2) *INFN*