

## Preface

VLVnT 2015 has been the 7<sup>th</sup> edition of the series of biannual Very Large Volume Neutrino Telescope Workshop. The character of the Workshop has largely changed since its first edition in 2003. At that time the IceCube and the ANTARES detectors were under construction while Baikal and AMANDA were taking data. The Workshop was launched with the aim to bring together astroparticle physicists, marine technologists and marine scientists in order to exchange ideas and expertise useful for the design, construction and operation, in the Mediterranean Sea, of a deep sea Neutrino Telescopes with an instrumented volume of multi-cubic kilometers. With the several editions of the Workshop it has been possible to follow the successful construction of IceCube at the South Pole and of ANTARES in the Mediterranean Sea, and gradually a growing fraction of the time was spent on data analysis, reconstruction techniques, calibrations, discussion of results. After a long period of preparation and of technology development the KM3NeT Collaboration has started the construction of the future Neutrino Telescope in the Mediterranean Sea. During the 6<sup>th</sup> edition of the Workshop in Stockholm (2013) the IceCube Collaboration presented the first direct evidence of a flux of high-energy cosmic neutrinos, during the 2015 edition of the Workshop this signal not only was confirmed with higher statistics but was the starting point for several other analyses also in close collaboration with ANTARES and in a multimessenger context.

Neutrino Telescopes have demonstrated to be also precision tools for fundamental physics: the measurement of neutrino oscillation parameters, the indirect search for dark matter, the possibility to study with future detectors like ORCA and PINGU the neutrino mass hierarchy are few example.

The Workshop was organized in plenary and parallel sessions.

Photon detection technique: Alexander Kappes, Dorothea Samtleben, Pasquale Migliozzi

Challenges in simulation and reconstruction: Jakob van Santen

Radio and acoustic detection techniques: Allan Hallgren, Robert Lahmann

Physics results: Chad Finley, Rosa Coniglione

Readout/DAQ/data transmission: Tommaso Chiarusi, Vladimir Aynutdinov

Calibration: Giorgio Riccobene, Dawn Williams

Computing models, data repositories, virtual observatory, ...: Gonzalo Merino, Christos Markou, Cristiano Bozza

Atmospheric neutrino phenomenology: maurizio spurio, Tyce DeYoung, Thomas Eberl, Spencer Klein

Installation/Infrastructure/Production techniques: Patrick Lamare, Jim Haugen

Multi-messengers search: Jon Dumm

On behalf of the guest editors, I would like to thank the Department of Physics of the “La Sapienza” University and the INFN that hosted the Workshop, the International Advisory Committee, the conveners of the parallel sessions and the Local Organizing Committee for their invaluable work.

Antonio Capone, for the guests editors