

Plenary Talk PV V Fri 11:00 Geb. 30.95: Audimax
Highlights of Neutrino Physics — ●SUSANNE MERTENS — Technical University Munich, Munich, Germany

Neutrinos are one of the most fascinating particles of the Standard Model. Despite major discovery in the last decades, many of their fundamental properties are still unknown. What is their absolute mass, how are the three neutrino masses ordered, is the neutrino its own anti-particle, is CP violated in the neutrino sector, are there more

than three neutrino species? Answering these questions would not only deepen our understanding of Particle Physics, but may reveal physics beyond the Standard Model, and play a key role in cosmology. Beyond studying neutrinos themselves, they are also ideal messenger particles to learn about the most violent processes in our cosmos with the help of neutrino telescopes. In this talk, the current and future neutrino experiments will be reviewed and their perspective to unravel some of the most interesting open questions in physics will be highlighted.