

Neutrino astronomy and neutrino physics with KM3NeT

Prof. Ulrich Katz

Erlangen Centre for Astroparticle Physics, Universität Erlangen-Nürnberg

KM3NeT is a cubic-kilometre-scale future neutrino telescope in the deep Mediterranean Sea. KM3NeT will investigate neutrinos of cosmic origin by detecting the Cherenkov light originating from charged secondaries of neutrino reactions. The exact same technology, albeit in a denser configuration, will also be used to determine the neutrino mass hierarchy from precision measurements of atmospheric neutrino oscillations. In the colloquium, the technical design of KM3NeT will be presented and the performance of the first detector modules in the deep sea reported. The expected physics sensitivity of KM3NeT both to cosmic neutrinos and to neutrino physics will be discussed.