

Towards the Very Large Volume Mediterranean Neutrino Telescope, KM3NeT

Thursday, July 21, 2011 9:45 AM (15 minutes)

KM3NeT (km^3 Neutrino Telescope) will be one of the world's largest particle detectors, built at the bottom of the Mediterranean Sea, providing a window for the observation of the Universe through high energy neutrinos. KM3NeT will complement the South Polar IceCube neutrino telescope in its field of view and significantly surpass it in sensitivity and discovery potential. The underwater KM3NeT facilities will also provide continuous connectivity for long-term deep-sea scientific measurements in the geo- and biological sciences.

In this talk we describe the major technical aspects of the KM3NeT design and we report on results concerning the evaluation of the sensitivity of the neutrino telescope to detect high energy astrophysical neutrinos. In particular, we present results on the discovery potential of the telescope in detecting galactic (point-like and extended) and extragalactic, transient (Gamma Ray Bursts) high energy neutrino sources as well as measuring the ultra high energy, diffuse neutrino flux.

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Session Classification: Astroparticle Physics

Track Classification: Astroparticle Physics