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KM3NeT project

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The KM3NeT collaboration aims at the construction of a multi-cubic-kilometre scale neutrino telescope in the Mediterranean Sea. The main goal of KM3NeT is to observe high-energy cosmic neutrinos. The first phase of the telescope construction has started at two sites in the Mediterranean: KM3NeT-Fr and KM3NeT-It. The KM3NeT-Fr site is close to that of Antares, about 45 km off-shore Toulon, France at a depth of 2500m; the KM3NeT-It site is 100 km off-shore the south-east coast of Sicily, Italy at a depth of 3500 m. At both sites, a seafloor network and shore stations are being installed to allow for connection of about 30 KM3NeT detection units, vertical structures holding optical modules. In its full configuration, KM3NeT will consist of a few building blocks, arrays of thousands optical modules, and will be the largest and the most sensitive high-energy neutrino detector. A prototype KM3NeT optical module is successfully operational in the Antares telescope since April 2013. A prototype KM3NeT detection unit with three optical modules is operational since May 2014 at the KM3NeT-It site. In the talk, the physics objectives and the design of the KM3NeT neutrino telescope and first results from prototypes operations are presented.

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