

Calibration and monitoring system of the KM3NeT Neutrino telescope

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The KM3NeT Collaboration is building two neutrino telescopes in the Mediterranean Sea. One is the ARCA detector, optimised for searches for high-energy neutrino sources in the Universe and it is under construction at the Capo Passero site, Italy, 80 km offshore at a depth of 3500 m; and the other is ORCA detector, near Toulon, France, 40 km offshore at a depth of 2500 m, aimed at the study of neutrino properties, like the mass ordering, with atmospheric neutrinos. In the final configuration, ARCA will consist of 2 Building Blocks (BB), each one of 115 Detection Units (DU), and ORCA of 1BB. The DUs are vertical strings anchored on the sea floor to form a three-dimensional array of 18 Digital Optical Modules (DOM), pressure resistant glass spheres, containing 31 photo-multiplier tubes (PMTs) able to detect Cherenkov light produced by neutrino-induced particles. To achieve the KM3NeT physics goals, ARCA will instrument $\sim 1 \text{ km}^3$ volume of sea water and a nano-second time synchronisation between PMTs and a 20 cm DOM position reconstruction accuracy is needed. At the present moment, 28 DUs have been already deployed in ARCA and 19 in ORCA.

In this contribution, the current strategy and the setup for the calibration procedures of the KM3NeT telescope are presented. The equipment test and procedure to check the proper functionality of the sea sensors dedicated to the monitoring of the deep-sea environment are also presented.