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Status and first results from the ARCA and ORCA lines of the KM3NeT experiment

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KM3NeT is a submarine Cherenkov neutrino telescope under construction at two sites in the Mediterranean Sea. The detector at the Italian site, close to the Sicilian coast and named ARCA, will be devoted to the detection of high-energy astrophysical neutrinos, while the detector at the French site, in the Toulon bay and named ORCA, will collect mainly atmospheric neutrinos to study the neutrino mass hierarchy. The telescope will be a network of strings anchored to the sea floor and instrumented with multi-PMT digital optical modules (DOM). The geometry of the detectors has been adapted to their physics goals: in ARCA, every string is 700 m high and has 18 DOMs, one every 36 m, with the inter-string distance of about 90 m; while in ORCA the strings are 200 m high, with an inter-DOM spacing of only 9 m and an inter-line spacing of ~23 m. The first two lines of ARCA have been deployed in December 2015 and May 2016 respectively, the first string of ORCA has been deployed in sept 2017. The first results of ARCA intra-DOM calibrations using K40 decays together with the first reconstructed atmospheric muons and the first data-MC comparison for ORCA will be presented.

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