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Atmospheric neutrino detection and Earth tomography with the KM3NeT detectors

The KM3NeT Collaboration is incrementally building a network of water-Cherenkov neutrino observatories in the Mediterranean Sea, consisting of two telescopes, named ARCA and ORCA (respectively for Astroparticle and Oscillation Research with Cosmics in the Abyss), sharing the same detection technology. Owing to the different energy ranges covered by its two detectors, KM3NeT will perform both oscillation and absorption neutrino tomography using mainly atmospheric neutrinos. After describing the status of ORCA and ARCA and discussing the latest results obtained so far for atmospheric neutrinos with partial detector configurations, we will present preliminary sensitivity studies addressing the potential of the full KM3NeT detectors for neutrino tomography of the Earth.

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