

We perform studies of the Earth's interior with atmospheric neutrinos, by measuring matter oscillations with KM3NeT/ORCA and absorption effects with KM3NeT/ARCA.

KM3NeT would be the first experiment able to perform both methods of Earth tomography with neutrinos and provide results independent of seismic measurements.

In the presented study we simulated 10 years of lifetime for full versions of both detectors and determined the accuracy with that KM3NeT can determine the electron density in the outer core region with oscillation tomography and the density profile of the Earth with absorption tomography.

Although the precision of seismic measurements cannot be reached, we show that neutrino tomography is a valid method of probing the inner regions of the Earth and may provide useful contributions to geoscience in the future.