

# Neutrino non-standard interactions with KM3NeT/ORCA detector

## Executive summary

The contribution compares sensitivities for neutrino non-standard interactions parameter  $\varepsilon_{\mu\tau}$  of the KM3NeT/ORCA full detector and already operational KM3NeT/ORCA Phase1 corresponding to 6 out of the planned final 115 detection units (DUs). KM3NeT/ORCA in its very early stage is already able to probe NSI with atmospheric neutrinos in  $\mu$ - $\tau$  sector on the level of only two to three times worse than the current limits from other experiments and after completed it will become the best world's tool for this area of research. We have calculated 90% CL sensitivity for  $\varepsilon_{\mu\tau}$  with KMNeT/ORCA 115 full detector and KM3NeT/ORCA 6 Phase1 and investigated the impact of the most important systematic uncertainties on both detector configurations. The main result are the 90% CL sensitivities for  $\varepsilon_{\mu\tau}$  NSI parameter:

$$-12 \times 10^{-3} < \varepsilon_{\mu\tau} < 12 \times 10^{-3} \text{ from ORCA with 6 DUs and}$$

$$-1.7 \times 10^{-3} < \varepsilon_{\mu\tau} < 1.7 \times 10^{-3} \text{ from ORCA with 115 DUs.}$$