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# Measuring the atmospheric tau-neutrino appearance with KM3NeT

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Since the discovery of anomalies in the solar and atmospheric neutrino fluxes over 20 years ago, it has been firmly established by neutrino experiments around the world that neutrinos are massive particles and that the neutrino flavour eigenstates constitute linear super-positions of the neutrino mass eigenstates.
Most statistical power in constraining this massive three-neutrino paradigm is provided by investigations into $\nu_e$ and $\nu_\mu$ disappearance and by $\nu_\mu \rightarrow \nu_e$ appearance.
However, the $\nu_\mu \rightarrow \nu_\tau$ appearance channel can also be observed, offering another complementary data set to test the model.

The Cubic-Kilometer Neutrino Telescope (KM3NeT) is expected to measure over 3000 charged-current tau-neutrino interactions per year arising from atmospheric neutrino oscillations.
This data sample will yield an unprecedented opportunity not only to measure the total cross-section for tau-neutrino interactions, but also to test models beyond the standard massive three-neutrino paradigm.

In this talk I will sketch the prospects for measuring the atmospheric tau-neutrino appearance with KM3NeT and highlight some of the unique challenges associated with distinguishing this channel.
In addition, I will outline the prospects of a template fitting procedure currently being developed for the measurement.

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