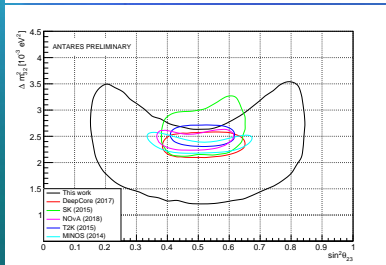
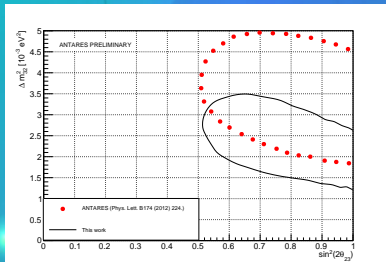
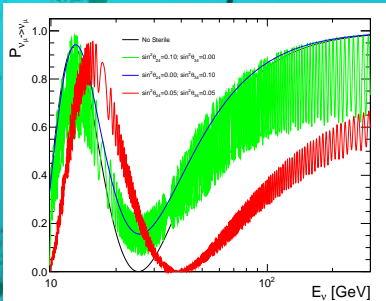


# Atmospheric neutrino oscillations with ANTARES

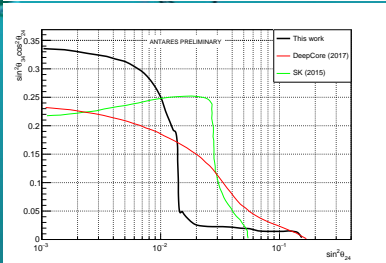
- 2830 days of ANTARES lifetime;
- Track channel only;
- 7710 events selected;
- 3-flavor oscillation probability through matter;
- Atmospheric  $\mu$  background extrapolated from data;
- Binned likelihood fit in 2D ( $\log_{10} E_{reco}$  and  $\cos \theta_{reco}$ );
- Good improvements wrt previous ANTARES oscillation analysis;
- Consistency with other published results.



# Constraining the 3+1 model with ANTARES



- Same data set used for standard oscillation analysis;
- Same fitting procedure;
- Priors on  $\Delta m_{32}^2$  and  $\theta_{23}$ ;
- Atmospheric muon contamination fixed at BF found in the standard oscillation analysis;



- $\Delta m_{41}^2$  fixed at  $0.5 \text{ eV}^2$ ;
- $\delta_{CP}$  and  $\delta_{24}$  left unconstrained;
- Results show consistency with other published limits.