

Future atmospheric neutrino detectors

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A new generation of atmospheric neutrino detectors will become operational within the next few years. With instrumented water/ice masses ranging from 0.2 Mtons to several Mtons they will accumulate several 100,000 neutrino events per year. This wealth of data accompanied by improvements of systematic uncertainties will allow to perform competitive precision measurements in the GeV energy range before the end of the decade. The determination of the hitherto unknown neutrino mass ordering can be addressed as well as a precision measurement of the neutrino oscillation parameters Δm_{21}^2 and θ_{13} . Further, these next generation atmospheric neutrino detectors will accumulate the world largest sample of tau neutrino interactions. This will on one hand allow to determine the tau neutrino cross section close to its kinematic threshold and can serve on the other hand as a portal for various beyond Standard Model searches.

Poster prize

Given name

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First affiliation

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Gender

Collaboration (if any)

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