

## **Ground Level Muon Flux Variation in a Cosmic Rays Simulation : A study of tidal frequencies in muon flux ground level detection using Corsika simulations**

Recent experiments [1] have shown that cosmic rays cascades originate a periodic tidal frequency muon flux at the ground level. Using the Corsika (COsmic Ray SIMulations for KAscade) tool kit [2], we simulate cascade scenarios, in a time scale of a year, which could be responsible for these frequencies, such as an atmospheric density variation and the incidence angle modification.

[1] H. Takai et al., "Tidal Frequencies in the Time Series Measurements of Atmospheric Muon Flux from Cosmic Rays", arXiv:1610.05983 [astro-ph.HE].

[2] <https://www.ikp.kit.edu/corsika/>

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