

Improvements in the FLUKA calculations of the atmospheric neutrino fluxes

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Abstract. The recent upgrades in the 3-dimensional calculation of the atmospheric neutrino flux based on the FLUKA Monte Carlo code are presented. These include a more precise evaluation of the geomagnetic cutoff, the inclusion of solar modulation and the extension to higher energy, allowing the use of this computation also for upward-going muon

production. We also discuss the possible effect of considering nuclear projectiles, as embedded in a next upgrade of the interacting model of FLUKA, thus overcoming the superposition model approximation.