

Sub-GeV atmospheric neutrinos background in organic liquid scintillator mediums

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Atmospheric neutrinos are produced in interactions of cosmic rays with atomic nuclei in the Earth's atmosphere. In low energy neutrino experiments they mainly considered as a background for studied processes. For atmospheric neutrinos in energy range below 1 GeV we present semi-analytical expected yield for four neutrino detection reactions: $\nu\text{-ES}$, $\bar{\nu}\text{-ES}$, inverse β -decay and $^{12}\text{C}(\nu, \nu')^{12}\text{C}^*(15.1 \text{ MeV})$, as well as results of Monte-Carlo simulation for other $\nu^{12}\text{C}$ interaction channels. Calculations are made for several neutrino experiments and include neutrino oscillation averaged over neutrino arrival directions.

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