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Sensitivity study for the nucleon decay with background reduction for the atmospheric neutrino interaction in the Super-Kamiokande

It is crucial to understand the atmospheric neutrino interaction (ATM-ν) in order to search for the nucleon decay (NDK) in the Super-Kamiokande (SK). In this poster, neutron tagging for ATM-ν background reduction will be introduced and sensitivity obtained by spectrum analysis for π momentum distributions from ATM-ν background and NDK signal MC will be reported using improved SK-4 MC processes such as vector generation and event reconstruction.

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