

Cosmogenic & reactogenic background estimations of the RICOCHET experiment

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Currently under installation at the Institut Laue-Langevin nuclear reactor, the RICOCHET experiment aims to detect reactor antineutrinos via the CEvNS process with great precision and look for new physics beyond the Standard Model. This experiment will use cryogenic bolometers with low energy threshold (50 eV) and particle identification to achieve these goals. A crucial part to the success of this experiment is the estimation of the background level of the site, such as the cosmogenic and reactogenic backgrounds. Extensive simulations using GEANT4 have been performed to design the shielding and the muon veto geometries needed to mitigate the reactogenic and cosmogenic backgrounds. Details of these simulations will be presented in this talk. Using the results on the simulated background rates and the expected signal, we then estimate the sensitivity to the CEvNS process and physics beyond SM.

Author: CHEMIN, Guillaume

Presenter: CHEMIN, Guillaume

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