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Radon background model for Hyper-Kamiokande

For the future Hyper-Kamiokande (HK) experiment, radon will be one of the most dangerous background for low energy neutrino analysis like solar neutrinos. Using Super-Kamiokande (SK) solar data, we developed a model of the radon distribution in the Super-Kamiokande detector. After scaling this model to the size of the future Hyper-Kamiokande detector, we can estimate the probable radon distribution in the future HK detector. Using this model, the possible impact of the radon background to the future HK low energy analysis can be estimated.

In this poster, we will present the development of our radon model from SK solar data. The estimation of the impact of the radon background on the future solar neutrino analysis will also be presented, considering different configurations of the HK photo-coverage.

Mini-abstract

Radon BG model developement for Hyper-Kamiokande from Super-Kamiokande solar data

Experiment/Collaboration

Hyper-Kamiokande

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