

Spectrometry of the Earth core using Hyper-K : Sensitivity study

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Neutrino oscillation is sensitive to the electron density of the media. Hyper-K has a potential to measure the electron density of the deep Earth by measuring atmospheric neutrino oscillation. By combining the electron density and the matter density, we can measure the average chemical composition as the ratio of atomic number (Z) to atomic mass (A). We report the sensitivity of Hyper-K as the Z/A spectrometer. We also report the systematic uncertainty of oscillation probabilities derived from matter density models.

Length (min.) request (including discussion time)

15 min

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