



Poster session 1 - Monday 4 July

P1.021 Spectrometry of the Earth using neutrino oscillations

C Rott¹, and A Taketa²

¹Sungkyunkwan University, South Korea, ²University of Tokyo, Japan

We demonstrate that large neutrino detectors could be used in the near future to significantly improve our understanding of the Earth's inner chemical composition. Matter induced neutrino oscillations depend on the Earth's electron density, while seismic measurements are sensitive to the matter density. The Earth's chemical composition can be determined by combining observations from large neutrino detectors with seismic measurements. We present a method that will allow us to distinguish between composition models of the outer core. We show that the next-generation large-volume neutrino detectors already provide sufficient sensitivity to reject extreme cases of outer core composition.