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Using Neutrinos to understand our Earth's Interior

The unknown constituents of the interior of our home planet have provoked the human imagination and driven scientific exploration. In the near future, it might be possible to better determine the Earth's chemical composition by combining observations from large neutrino detectors with seismic measurements of the Earth's matter density and data from high-pressure experiments. The talk will discuss the potential of using neutrino absorption and neutrino oscillation tomography to determine the Earth matter density, and Earth's interior composition, respectively. We will further discuss how Earth interior models impact uncertainties on neutrino oscillation parameters and how to quantify them better.

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