

LABORATORI NAZIONALI DEL GRAN SASSO

SEMINAR ANNOUNCEMENT

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**“Geo-neutrinos: a new and
unique probe of the Earth
interior”**

Abstract

The observation of geo-neutrinos recently made by Borexino opens a new window to the Earth interior. Geo-neutrinos are a unique and instantaneous messenger of the abundances and distributions of the radioactive elements that produce heat within the Earth. By measuring their flux and spectrum, it is possible to reveal the distribution of long lived radioactivity in the Earth and to assess the radiogenic contribution to the total heat balance of our planet. These pieces of information, in turn, are critical for the understanding of complex processes such as the generation of the Earth's magnetic field, mantle convection, and plate tectonics. The basic geophysical and geochemical knowledge of the Earth structure and composition will be overviewed and the role geo-neutrinos explained.

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