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003-01

Room:IC

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## A river runs through oceanic crust

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Seafloor hydrothermal activity is known at about 400 sites in the world. Such sites are regarded as hypothetical river mouth of the advection that develops within the oceanic crust. The TAIGA project has been investigating the in-situ biogeochemical reactions adopted by the resident extremophiles together with the overall structure and function of the system.

Keywords: TAIGA project, hydrothermal activity, deep biosphere, extremophile, oceanic crust, drilling

## High energy particle imaging of the solid earth

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Researchers have developed a technique of muon radiography since 1955 for searching a hidden chamber inside an Egyptian pyramid and natural resources. In 1980s, neutrino radiography was suggested for searching natural resources with a larger scale, but the capital and running was estimated to be astronomical, hence, unrealistic. In this lecture, I will review the result of muon radiography of volcanoes in 2006-10, and the development of neutrino radiography with a novel particle detector in Antarctica.

Keywords: muon, neutrino, radiography, volcano, solid earth

## Anatomy of solar system origin from Itokawa and the family

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Our solar system has been formed about 4.6 billion ago. Materials formed before and during solar system formation are preserved in chondrites which is primitive meteorites. The materials have been found in recent 10 years by new state-of-art instruments. The materials show that very active and very quiet environments are coexisted in the early solar system.