
[JJ] Evening Poster | H (Human Geosciences) | H-CG Complex & General

[H-CG27]Nuclear Energy and Geoscience

convener:Eiji Sasao(Tono Geoscience Center, Japan Atomic Energy Agency), Tsutomu Sato(Faculty of Engineering Hokkaido University), Ryuta Hataya(一般財団法人 電力中央研究所)

Thu. May 24, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Handling of geological hazard assessments represent a major environmental concern in the modern society due to constructing nuclear facilities and their radioactive wastes, and also related to the management of contaminated biosphere after nuclear disasters. The session rational is to provide a forum to deal with various aspects of scientific and engineering aspects of nuclear power. The session in this year focuses on radioactive waste disposal and covers not only scientific aspect such as characterization of geological environment but also engineering aspects such as microbe-nuclide, mineral-water, and cement-water interactions. In addition to this, themes on seismic hazards at nuclear facilities, environmental behavior of radionuclides emitted from disabled nuclear plants, and volume reduction and reuse of cesium contaminated soils are welcomed.

[HCG27-P05]Geochemical modeling for groundwater chemistry based upon minerals information

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Keywords:groundwater, thermodynamics calculation, limestone area

To understand long-term geochemical stability at the deep underground condition, we considered about water-rock interaction by thermodynamics calculation based on mineral compositions of Toki granite and proposed an analytical method for estimation of groundwater chemistry. However, the feasibility of this method has to be improved to apply other rock types in generalization. We examined the viability of this method for groundwater in limestone area. As a result of the simulation by the proposed method, groundwater chemistry in limestone area was represented by accounting for CO₂ partial pressure and reaction of calcite.