
[JJ] Evening Poster | S (Solid Earth Sciences) | S-CG Complex & General

[S-CG63] Rheology, fracture and friction in Earth and planetary sciences

convener: Osamu Kuwano (Japan Agency for Marine-Earth Science and Technology), Ichiko Shimizu (Department of Earth and Planetary Science, Graduate School of Science, University of Tokyo), Hidemi Ishibashi (静岡大学理学部地球科学専攻, 共同), Miki Tasaka (Shimane University)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

The aim of this session is to join people from various research area in the earth and planetary sciences and to stimulate discussion beyond the boundaries of each research area. Our goal is to deepen our understanding of dynamics in geosciences by looking over whole areas in the earth and planetary sciences from the viewpoint of PHYSICS OF DEFORMATION, FLOW, AND FRACTURE. We welcome any field (e.g., earthquake, volcano, earth surface, crust, mantle and the core, and other planets and satellites) and any approach (e.g., laboratory experiments, numerical simulations, field observations, and theories).

[SCG63-P05] Mechanism of high porosity anomaly development at Kazusa fore-arc basin Formation, Japan: implication for pore pressure evolution model in fore-arc basin

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Keywords: over-pressurization, fore-arc basin, the Kazusa Formation, consolidation

To investigate mechanisms of over-pressurization in sedimentary basins is important for understanding properties of fluid circulations, and/or developments of resources at sedimentary basins. It has been reported that there are high porosity anomaly has been reported at the Kazusa fore-basin Formation, Boso peninsula, NE Japan, which is possibly because of over-pressurization. Marumo (2015, Master thesis) examined how pore pressure develops in silt/mudstone layer which has hydraulic properties similar to those in the Kazusa Formation simply by sedimentation and consolidation of the layer, and indicated that this simple pore pressure development model can be one of the candidates for mechanisms of the high porosity anomaly development at the Kazusa Formation. We develop the model of Marumo (2015) by including more realistic conditions such as sedimentation, subsiding and uplifting history for the Kazusa Formation, and examine the mechanism of the high porosity anomaly development and the pore pressure development evolutions.