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

[S-CG55]Various interactions between solid Earth and climates

convener:Takashi Nakagawa(JAMSTEC/MAT), Yusuke Yokoyama(Atmosphere and Ocean Research Institute, University of Tokyo), Jun'ichi Okuno(国立極地研究所, 共同), Tadashi Yamasaki(National Institute of Advanced Industrial Science and Technology)

Mon. May 21, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

This session aims to discuss interactive features between solid Earth and climate evolution, for instance, atmospheric excitation of free oscillation in the solid terrestrial planets, crustal deformation and its influence on deep mantle rheological structure caused by post-glacial rebound, long-term climate evolution with volcanic degassing history, influence of topographic variations due to plate tectonics to the atmospheric circulations and physical and chemical interaction between ocean floor dynamics and oceanography. Other topics associated with an interaction between solid planetary geosciences and climate sciences should be addressed in this session. Contributions from all disciplines composed of Earth and Planetary Sciences (observations, field works, experiments and numerical computations) are definitely welcome.

[SCG55-P04]On the climate and magnetic evolution of Earth-like planets

*Takashi Nakagawa[1], Eiichi Tajika[2], Shintaro Kadoya[3] (1.JAMSTEC, 2.Univ. of Tokyo, 3.Univ. of Washington)

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In order to reconcile co-evolution system of deep planetary interior and surface environment for geologic time-scale, heat and mass transport across the deep planatery interior is an essential process. Here we develop simplified planetary system evolution model in parameterized mantle convection model including global thermal and chemical energetics of metallic core for magnetic evolution and global carbon-silicate cycle for surface climate. A wide parameter survey of mass exchange of volatile elements across the surface plate is examined with efficiencies of heat and mass transport in deep planetary interior, which can check sensitivities to the surface temperature associated with variations of partial pressure of carbon dioxide and its feedback to the dynamics of deep planetary interior. In addition to those parameter study, we attempt to reveal the climate evolution with complicated radiative schemes in the atmosphere coupled with deep planetar evolution model.