
[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-P06] Relation between depth of the continental shelf and surface mass loads around the Antarctica

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The depth of the continental margin around the Antarctica has been observed about -500~-900 m depth, and there is the place that reaches -1,000 m in some places. Clearly, the depth of the continental shelf around the Antarctica is very deep in comparison with that of the other continental margins in the world. These characteristics are expected to come from the surface mass loading by Antarctic ice sheet and ocean sediments around the Antarctica. However, very few quantitative evaluations have been reported on the relation between the depth of continental margin and surface mass loads in the Antarctica. In order to know the effect of the ice sheet fluctuation and accumulation of the sediment on the surface elevation change, we need to evaluate the isostatic deformation process due to surface mass loads numerically. In this presentation, we show the quantitative differences of the continental depth between the Antarctica and the other continents, and using the glacial isostatic adjustment (GIA) modelling, we estimate the effects of ice sheet and sediment loads on the depth distribution around the Antarctica.