
[JJ] Evening Poster | B (Biogeosciences) | B-CG Complex & General

[B-CG10]Phanerozoic biodiversity change: Extinction and diversification

convener:Yukio Isozaki(Department of Earth Science and Astronomy, Multi-disciplinary Sciences - General Systems Studies, Graduate School of Arts and Sciences, The University of Tokyo), Yusuke Sawaki(The University of Tokyo)

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Biotic evolution was the consequence of repeated extinction and following diversification in the past, which was caused by large-scale environmental changes, in particular, by extremely rapid and drastic forcing that changed the environments of the biosphere. Irreversible and episodic changes in material cycling on the planet and in galactic cosmic radiation are nominated as major driving mechanism for the alleged rapid, large-scale environmental perturbations. The biodiversity change in the fossiliferous Phanerozoic record is characterized by 5 major mass extinctions within the long-term trend of diversity increase. Nonetheless, each extinction event has been explained rather in ad hoc manner, without any universal explanation. This session discusses the Phanerozoic biodiversity change under a new light of the recent progress in geology.

[BCG10-P02]Volcanism-related natural radioactivity and its potential influence on ecosystem in the Great Rift Valley system in east Africa

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In continental rift zones such as the Great Rift Valley system in East Africa, alkaline magmatism commonly occurs to provide material with extremely unique geochemical composition. The unique episodes in evolution, such as ultra-fast genome diversification among fresh-water fish (cyclids) and in hominids, also represents uniqueness of the domain. Most of the previous studies, however, discussed secular changes in environments and possible response in local flora/fauna, without paying much attention to possible cause-effect link between composition of rocks and animal evolution. Present study focuses on unique volcanic rocks and their effects to the surface environment in the Great Rift Valley in Kenya, and checks possible influences of alkaline volcanics enriched in natural radionuclide (⁴⁰K, U and Th) to local paleo-environments and ecosystem. The results of geochemical analyses of ancient Quaternary lake sediments and associated volcanics are presented.