

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

*Hiroki Sato¹, Yukio Isozaki¹, Hisashi Suzuki²

1. Department of Multidisciplinary Sciences, Graduate School of Arts and Sciences, The University of Tokyo, 2. Department of Sociology, Faculty of Letters, Otani University

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.

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