
[JJ] Evening Poster | B (Biogeosciences) | B-BG Biogeosciences & Geosphere-Biosphere Interactions

[B-BG03]Microbial ecology in earth and planetary sciences

convener:Michinari Sunamura(University of Tokyo Dept. of Earth &Planetary Science), Natsuko Hamamura(Kyushu University), Keisuke Koba(京大生息学研究中心, 共同), Yuki Morono(Kochi Institute for Core Sample Research, Japan Agency for Marine-Earth Science and Technology)

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Microbes have exerted the great influences on earth environments through the history of earth. Microbial ecology is a study of interaction between microbes and surrounding environments. Research target of Microbial ecology covers most of environments on the earth and planet, e.g. soil, subsurface, subseafloor, ocean, river, lake, air, space, volcano, fault and earthquake, minerals, and more. In this session , we aim to exchange informations of microbial distribution, population dynamics, function, effect on material cycles between microbial ecologist and earth&planetary scientist. We hope effective discussion from interdisciplinary approaches in this session.

[BBG03-P02]Magnetic field response by magnetotactic bacteria

Magnetospirillum magnetotacticum MS-1 for understanding a natural magnetic characteristic formed at early stage of sediment formation

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Variation of the past geomagnetic field is recorded in marine sediments as a fossil magnetization, called natural remanent magnetization (NRM). NRM of the sediment has long been thought to be caused by detrital and aeolian magnetic grains. Recently, interests are growing on the contribution of biogenic magnetic grains originated from magnetotactic bacteria to the NRM observed in sediments. To investigate characteristics of NRM carried by biogenic magnetic grains, we cultured magnetotactic bacteria *Magnetospirillum magnetotacticum* MS-1 (hereafter MS-1) and conducted remanent magnetization measurements by simulating an early process of sediment formation. MS-1 was placed in magnetic field and its orientation was observed even for dead cells and well-matched to the theoretical model prediction. Comparison of the observation in this study and NRM in natural sediments indicated that NRM carried by magnetotactic bacteria is the result of initial imprinting by natural magnetic field during sedimentation and following disturbance such by bioturbation, diagenesis and so on.