[H-CG38_29AM2] Systems of life in closed-ecology on planets

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Living creatures on the earth have been evolved since its origin a long time ago. They equip several important functions affecting each other. Knowledge on those functions and interaction of the ecology is essential for secure design of a closed-ecosystem with limited number of living species under the harsh environments, such as space and deep sea or desert.

12:30 PM - 12:45 PM

[HCG38-P02_PG] Environmental response in bacteria to an applied magnetic field

3-min talk in an oral session

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Keywords:Magnetic field, Bacteria, Growth curve

Metabolic changes in living cells under various magnetic fields should be considered in closed-ecology on planets. Magnetic fields may induce multiple effects in biological systems, including change in DNA replication or RNA transcription and modification of ion and protein flow across membranes. In recent years, influences of various electromagnetic fields on cell and organisms have been investigated by many researchers. However, the detailed mechanisms in the effects of magnetic field on organisms are still controversial. In this study, we had focused on influences of the magnetic field on environmental microbes. Some bacteria susceptible to the applied magnetic field were isolated from the soil. To investigate expression changes of intracellular proteins involved in regulating cell growth by the applied magnetic field, cellular proteins in the bacteria cultured under the applied magnetic field were analyzed by SDS-polyacrylamide gel electrophoresis.