

General Theme 4

4.7

The use of sedimentary archives for paleoclimatic and paleoenvironmental reconstructions can be complicated by diagenetic processes. Microbial communities present in the different stages of sediment burial and formation are passively or actively mediating these processes. Microbes encompass differential degradation of organic matter, changes in redox states of key elements like sulfur, iron or manganese, and dissolution and precipitation of mineral phases such as calcium carbonate, iron sulfides, etc. A good understanding of these microbial processes is thus necessary to access the full potential of lake and ocean sedimentary archives. In this session, we invite all contributions that discuss the effects of microbial communities on sedimentary archives with approaches involving organic matter characterization (biomarkers), isotope biogeochemistry and omics methods. Research that advances our understanding of microbial activity within sediments through in-situ or ex-situ experiments is very welcome. Exploratory studies that link the deep biosphere to their environment in particular within the IODP and ICDP framework are also encouraged. We hope to gather a range of multidisciplinary contributions that will allow to reinforce the fast growing synergy between sedimentologists and microbiologists in lake and ocean sediment studies.