

Category

BE Biology, Ecology, Ecosystems, Biodiversity

Session Number

BE-1

Session Title

From boots to bytes: 'omics' tools for microbial diversity and biogeography

Session Description

This session invites comparative studies using high-throughput 'omics' techniques to resolve large-scale microbial diversity and biogeographic patterns across the three poles (Arctic, Antarctic and mountain regions). The session concentrates on the microbial and viral diversity, ideally comparing at least two geographic regions. All freshwater and terrestrial ecosystems are included, such as melt water ponds, streams, perennially ice-covered lakes and supraglacial ecosystems as well as soils, glacier forefields and other terrestrial and aquatic biotopes. 'Omics' techniques are encouraged, but more traditional methods can also be accepted and methodologies can be discussed.

The terrestrial habitats of the three poles have strikingly similar physical properties. The harsh conditions permit the survival of a limited selection of (micro) organisms. Yet, their diversity and biogeographic patterns are still unresolved. The aim of this session therefore is to go beyond descriptive and geographically limited studies and to encourage broad, comparative and process-oriented research towards large-scale biogeographic patterns, environment-diversity relationships, and ecological drivers of diversity patterns. This may also include studies on natural and anthropogenic dispersal pathways, ecological niches as well as present and future climatic-driven habitat and diversity change.

Keywords: Microbiology, biodiversity, biogeography, Antarctic, Arctic, mountain, high altitude, aquatic and terrestrial habitats, three poles, high throughput sequencing, metaproteomics, metatranscriptomics, metagenomics, chronosequences, microbiome

Lead Convener: Julia Kleinteich

Email: julia.kleinteich@ifg.uni-tuebingen.de

Affiliation lead-convener: Center for Applied Geosciences, University of Tübingen, Tübingen, Germany

Co-convener 1: Anne Jungblut

Email: a.jungblut@nhm.ac.uk

Affiliation: London Natural History Museum, London, UK

Co-convener 2: K.P. Krishnan

Email: kprishnan@gmail.com

Affiliation: National Centre for Antarctic and Ocean Research, India

Co-convener 3: David Velazquez

Email: david.velazquez@uam.es

Affiliation: Universidad Autónoma de Madrid, Madrid, Spain