

**Category**

BE Biology, Ecology, Ecosystems, Biodiversity

**Session Number**

BE-7

**Session Title**

Up- and Down-scaling approaches in Polar Ecosystem Research

**Session Description**

A huge amount of single results on biological processes and ecologically relevant chemo-physical parameters have become available in the past decades. Overarching topical themes in ecosystem research demand results, which are representative for larger units of an assessment in terms of time, space and coverage of taxonomic, as well as functional, organism groups. Up-scaling research concepts, including modeling approaches, fitted sampling designs and analyses provide results, which fulfill these criteria. Notwithstanding, down-scaling approaches are needed to get better insights into the mechanisms of functioning of ecological systems including their drivers and provide a means to parameterize processes for models. This can be achieved through detailed analyses of comparative data and surveys as well as in situ experiments in areas identified by large-scaled surveys, e.g. hot and cold spots or representative scenarios in biological processes and biodiversity. We welcome contributions to ecosystem research in the Arctic or Antarctic (or both), which focus on biological processes and the use of different environmental parameters, illustrating of up-scaling or down-scaling approaches and how they help us understand the functioning of polar ecosystems.

**Keywords:** System understanding, small-large scale analyses, in situ experiments, biological processes, Terrestrial, Marine, Arctic, Antarctic

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