

Category

EN Environment & OS Ocean, Sea Ice & GG Geophysics, Geology, Solid Earth & CR Cryosphere

Session Number

EN-7

Session Title

Biogeochemical cycling in the Polar Regions: Terrestrial and Ocean interactions

Session Description

Climate warming-induced changes in high latitude polar regions, surrounding oceans, and high altitude third pole regions, have the potential to significantly influence the future of Earth's biogeochemical cycles. Landscape evolution through permafrost thawing, glacial retreat and cryogenic weathering processes may have a cascading effect on the terrestrial biogeochemistry and hydrological cycle. Changing freshwater fluxes may alter mineral, elemental, nutrient and carbon fluxes into the ocean, affecting their productivity and cycling globally through overturning circulation. Understanding and quantifying the impact of such inputs are critical to our understanding of how the polar oceans respond to these changes, and on the efficiency of the global ocean as a net atmospheric carbon sink. This session looks to explore and integrate advances in understanding of changing biogeochemical cycling both between and in the terrestrial cryosphere and polar oceans. We invite researchers from diverse backgrounds (geochemical, terrestrial, cryospheric, and marine) to present information on short- and long-term studies of biogeochemical cycling of inorganic and organic elemental species, isotopes and nutrients; new observational, experimental and simulation approaches to quantify changing fluxes and ecological responses. We encourage submissions from geographically diverse polar locations, i.e. pan-Arctic, Antarctic, Southern Ocean and third Polar Regions.

Keywords: biogeochemistry, cryosphere, terrestrial, ocean,

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