



## Permafrost Carbon Feedback

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### 5A - Carbon Cycles in Cold Regions: Modelling and Observations

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This session focuses on understanding the response of carbon cycles to the rapid warming being experienced in cold regions of the world (the Arctic, Antarctic, Tibetan Plateau, and the alps, etc.), where year-round or long-term measurements are often limited. We encourage presentations that share recent findings that improve our understanding of the mechanisms that drive the sensitivity of the carbon cycle, including modelling (both top-down and bottom-up approaches) and observations (both remote sensing and in-situ measurements).

This session aims to share current advances in respective research fields and to explore the possibilities of building tight collaborations on climate change and carbon cycle science in the world's climate-sensitive regions as an alliance. The topics of this session will include but are not limited to (1) Model development: improving or developing ecosystem models to improve our understanding of the ecosystem processes in the cold regions; (2) Remote sensing and in-situ observations: introducing new observations or datasets across different spatial and temporal scales, new techniques of measuring greenhouse gas and using remote sensing products that imply vegetation or land surface properties; and (3) Data assimilation methodologies and applications: the data assimilation methodologies used to combine model and observations to improve our understanding of ecosystem carbon cycles, as well as the applications of new observations to constrain ecosystem models.

**Keywords:** Carbon Cycles, Cold Regions, Modelling, Observations

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