

Neuantrag auf Blizzard für EU Projekt Page21

Project:

Project title: Changing Permafrost in the Arctic and its Global Effects in the 21st Century (PAGE21)

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Abstract

Permafrost is ground that remains continuously at or below 0°C for at least two consecutive years, and underlies 24% of the land of the Northern Hemisphere. In the past decade, modelling studies have demonstrated sustained warming of the Arctic. A projected decline of the permafrost extent will have strong impacts on the Earth system, changing affecting global climate through the mobilization of carbon and nitrogen stored in permafrost. PAGE21 will understand and quantify the vulnerability of permafrost environments to a changing global climate and investigate the feedback mechanisms associated with rising greenhouse gas emissions from permafrost. To do so, we will use a unique set of Arctic permafrost investigations performed at stations spanning all arctic bioclimatic zones. The project brings together the best European permafrost researchers with outstanding participants from Canada, Russia, the USA and Japan. The approach is truly original encompassing field measurements of permafrost processes, pools and fluxes, with remote sensing data and global climate models at local, regional as well as. It is the first time a project combines the expertise at the panarctic scale. Its output will help to advance knowledge on permafrost processes at multiple scales, and focus on improving global numerical permafrost models and the ensuing future climate projections and assessment of stabilisation scenarios. These outputs will feed into global assessments and international observing programs, in which most of the consortium members are already actively participating in a leading role. Specifically, this project will provide projections of greenhouse gas releases from thawing permafrost terrain at panarctic scales during the 21st Century, with direct implications for global policy discussions on emission reduction targets.