



SESSIONS EUCOP6_ 2023

Session title: Monitoring of electrical and electromagnetic properties in frozen ground (including the IPA Action Group IDGSP)

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Summary: Electrical methods are some of the most useful geophysical techniques for detecting, mapping, and characterizing permafrost due to their wide range of potential applications and simple and robust survey design. Today, electrical methods such as Electrical Resistivity Tomography (ERT) are increasingly considered as a standard technique to establish a baseline understanding of the subsurface structure at permafrost sites. Given their high sensitivity to changes in the ice and water content of the subsurface, repeated surveys, as well as continuous monitoring of electrical properties, have become popular for monitoring permafrost degradation in both polar and mountain permafrost environments. This session aims for an overview of current challenges and recent advances in monitoring the electrical and electromagnetic properties of frozen ground, including advances in survey design and monitoring set-up, processing and inversion of collected time-series, laboratory experiments, or quantification of temporal changes in ground ice content. We welcome applied and theoretical contributions based on all relevant electrical and electromagnetic techniques from polar and mountain permafrost environments as well as laboratory investigations. The session will include, but is not limited to, contributions from the IPA action group 'Towards an international database of geoelectrical surveys on permafrost (IDGSP)' (2021-2023), which aims to promote the repetition of historical geoelectrical surveys. Submissions based on individual case studies, first results from joint analysis of the IDGSP data set, database-related topics, etc. are all welcome.