



Remote Sensing of Permafrost

10B - High Resolution Remote Sensing Applications in Permafrost Studies

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Mapping and modelling of permafrost and surface temperatures have become a widespread and shared aim among research groups to project the climate change effects on regional to hemispherical scale. Conversely, the ground validation dataset is still poor and often related to single temperature profiles in boreholes, not well representative of the local scale variability. Even the CALM experiment is restricted to measurements of nodes, knowing that at the inter-node span, the environmental control on permafrost and active layer might change drastically. Therefore, the increase of validated remotely sensed datasets at very high resolution is of scientific interest both for filling the gap between the in-situ measurements and the hemispheric scale (coarser resolution) in modelling and for reaching the closest assessment to the natural variability of permafrost drivers.

This session embraces studies conducted from ground to air-borne and satellite remote sensing of (1) permafrost thermal state; (2) active layer dynamics; (3) surface energy balance; (4) periglacial processes; (5) their interactions and controls. All the contributions aiming to enhance our understanding of the application of multi-spectral cameras, UAVs, self-made sensors, space-borne platforms and validation techniques to permafrost science are welcome.

Keywords: Remote Sensing, UAV, RPAS, Permafrost Modelling, Satellite

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