Session title: Advances in the observation and simulation of the snowpack: Implications and applications for permafrost monitoring

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Summary: The snowpack is the element of the cryosphere with the highest spatial and temporal variations. Additionally to the major importance that the snowpack has to isolate frozen soils and glaciers from the atmosphere, it has manifold impacts on water availability, vegetation patterns, and ecosystems. In the last years important advances on monitoring snow dynamics have been done, comprising remote sensing techniques, detailed simulation system or the combination of these through data assimilation routines. There exists a wide variety of approaches but also on the spatial and temporal scales and on the variables monitored. A deeper comprehension of snow dynamics in remote areas will allow an improved understanding of permafrost evolution in these areas, together with an enhanced monitoring. This session will focus on novel studies applying state of the art models, remote sensing or in-situ techniques and also the combination of these to monitor and understand snow dynamics. We encourage contributions with special focus on the snowpack in polar and mountain areas.