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**Title:** *High time and space resolution analysis of Austre Lovén glacier seasonal and interannual dynamics (Svalbard - 79°N)*

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Austre Lovén glacier is a small valley glacier in Svalbard. It has been retreating since the little ice age. Over the last five years, an extensive monitoring program has been conducted in this glacier basin. A network of 36 ablation stakes has been distributed at regular intervals over the 4.5 km<sup>2</sup> glacier surface. Mass balance measurements were complemented with regular snow drilling campaigns aiming at understanding the links between microclimatic parameters and glacier evolution. In addition, 20 automatic temperature loggers have been recording hourly data. 6 cameras provided 3 pictures a day covering most of the glacier surface and giving an accurate account of instant local weather. These pictures were also processed to provide quantitative information on the snow cover. Outflow measurements were performed each year. Finally recent developments include the use of terrestrial lidar to monitor the snow and rock dynamics of the slopes.

Overall the data acquired give a precise overview of the glacier evolutions. Mass balance measurements account for ice loss. Outflows do provide the global water volumes associated with summer melting. Dynamics of the snow cover are linked with the glacier melt. Eventually temperature data are integrated in a degree-day model to understand the contribution of ice melt to the hydrological budget. When linked together all these results lead to a better understanding of seasonal and interannual dynamics at the glacier basin scale.