



## **Hydro-climatic variability in the Hardanger glacier in Norway**

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The ice cap in southern Norway in the Hardanger glacier catchment is found to be exceptionally sensitive to climate change based on the climate modelling studies for the past 4000 years. In the changing climate, understanding the local hydro-climate, including water balance of the Hardanger glacier catchment, when it poses risks, can improve societal resilience. We analyzed present hydro-climate variability using data from one of the few innovative high-resolution modeling tools, the fully coupled glacier and the WRF-Hydro modeling system (hereafter WRFhydroglac) to study the mass balance and snow processes over the glaciated catchment. This study evaluates the skill of the WRF against available observations. We also investigate on the snow processes from the WRFhydroglac simulations under the influence of the local wind regime.