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Influence of surface changes on spatio-temporal variations of basal properties for Kronebreen, Svalbard

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While land ice is one of the main contributor to sea level rise, still more efforts are needed to understand key processes and integrate them into models. Among them is the treatment of basal sliding and its spatio-temporal variations. Most predictive models use a simple parameterisation either based on a single observation, either based on a sliding law. By inverting three years of surface velocities to obtain basal properties, we aim to gain better insight from observed data of a fast flowing outlet glacier, Kronebreen, in Svalbard. We show the importance of spatio-temporal variations, mainly influenced by surface runoff during the melt season, on the dynamics of the glacier.