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## Linking past precipitation changes with changing snow conditions on Ammassalik Island, Southeast Greenland

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Along with Arctic warming, climate models project a strong increase in Arctic precipitation in the 21st century as well as an increase in the ratio of liquid to total precipitation. Studying past precipitation changes in relation to changes in the formation, extent and melt of seasonal snow can increase our understanding of the snow climatological impacts of the projected future precipitation changes. In this contribution, the link between past precipitation changes and snow conditions on Ammassalik Island, Southeast Greenland will be assessed with a combination of in-situ observations, results from a regional climate model and an integrated snow model. The performance of the snow model will be evaluated with newly established in situ snow height and snow water equivalent data. In the same way, output from the regional climate model is evaluated with automatically monitored precipitation and climate data from weather stations. Thereafter results from model runs of the two aforementioned models will be assessed together to explore the link between precipitation changes and changing snow conditions. A particular interest lies in understanding the shift in the rainfall-snowfall elevation boundary and related snowmelt, as our hypothesis is that more liquid precipitation on higher elevations will lead to increased snowmelt in this mountainous area.