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## Past trends in precipitation and in the ratio of snow to rain in East Greenland

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Climate models project a strong increase in Arctic precipitation as well as an increase in the ratio of liquid to solid precipitation for the 21<sup>st</sup> century. While previous studies have explored past trends in precipitation, relatively little is known about the trends in the ratio of liquid to solid precipitation. A regression analysis of the ratio of liquid to solid precipitation in East Greenland will be conducted to better understand if and how precipitation as well as the relative fractions of snow and rain in precipitation have changed in the time period 1958-2019. This will be done in the context of the interdisciplinary project Snow2Rain which focuses on understanding how the transition from snow to rain is influencing quality of life in and around Tasiilaq (Southeast Greenland). Here, in a broader geographical context, a combination of results from the Regional Atmospheric Climate Model (RACMO2.3p2) and meteorological observations from weather stations along the coast of East Greenland between 65° N and 70° N will be used to assess changes in the ratio of liquid to solid precipitation. The station data will serve to cross-check the output from the regional climate model. A simple partitioning scheme based on near-surface temperature will be used. The combination of model data and weather observations can increase our understanding of trends in the relative fraction of precipitation that falls as snow or rain along the data sparse Greenlandic East coast.