

Evaluation of Arctic Energy and Moisture Budgets in the MERRA Reanalysis
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In the Arctic, quantitative surface flux estimates are important for the evaluation and attribution of changes in a rapidly evolving climate. Atmospheric numerical analyses are important tools for the systematic evaluation of large-scale atmospheric phenomena. The Modern Era Retrospective-analysis for Research and Applications (MERRA) has recently been produced by NASA's Global Modeling and Assimilation Office (GMAO). The objective of MERRA is to provide a climate context for the NASA satellite observing system and to improve the representation of the water cycle in reanalyses. Here, a quantitative assessment is presented of MERRA over the central Arctic in comparison to available observations and previous study, with particular emphasis on SHEBA surface energy fluxes and precipitation time series from Soviet drift camp stations. A discussion of 21st Century changes in surface moisture and energy fluxes in the presence of a retreating summer sea ice cover is given.