

# **Changes in the Antarctic surface mass balance since 1979: Perspective from five global reanalyses**

*Julien P. Nicolas and David H. Bromwich*

*Polar Meteorology Group, Byrd Polar Research Center, and Atmospheric Sciences Program,  
The Ohio State University, Columbus, Ohio*

An intercomparison of the surface mass balance (precipitation minus evaporation/sublimation (P-E)) simulated by five global reanalyses (NCEP-2, JRA-25, ERA-Interim, MERRA and CFSR) was recently published. The primary purpose of the study was to report on some spurious trends in the reanalysis fields that could be related to changes in the observing system. The study concluded on the unsuitability of some of the datasets for climate change assessment in high southern latitudes. This initial investigation focused on the 20-year period of overlap between the reanalyses (1989-2009), a relatively short period by Antarctic standards. The ERA-Interim dataset was recently extended back to 1979. The talk provides an updated overview of the changes in Antarctic P-E depicted by the different datasets during 1979-2010, with some emphasis on the West Antarctic Ice Sheet.