



NASA's Modern Era Retrospective-analysis for Research and Applications (MERRA)

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In 2006, the Global Modeling and Assimilation Office (GMAO) at NASA's Goddard Space Flight Center will begin production of a new global reanalysis. This paper provides an overview of the system and project planning over the last two years, as well as the plans for production and dissemination of the data. Production will be carried out with the Goddard Earth Observing System version 5 (GEOS5) data assimilation system consisting of a global model developed at GSFC, and the GSI analysis system from the National Centers for Environmental Prediction (NCEP). The period of integration covers the satellite era, from 1979-present (we expect to continue into the future, ending no earlier than the end of 2007). The full resolution data will be available on a 0.5 degree regular grid, but a 2 degree subset will also be available for large-scale applications. The output data streams will include Earth system variables that can be used in a multitude of research and applications problems. We also expect to produce a Reduced Observing System Baseline (ROSB) stream of the analysis. The ROSB will branch from the full reanalysis in 1987, prior to the analysis of SSMI data, and continue through present with only conventional and TOVS observations. There are several potential uses for the ROSB analysis, such as better understanding of the impact of modern research and operational satellite measurements and fewer corrections to the time series. Online quick-look and data access tools are expected to help make the product easily accessible to the community.