

Implementation of a Kalman Filter for Constituent Data Assimilation on Massively Parallel Computers

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A Kalman filter for assimilating atmospheric trace constituent data is being developed. The assimilating model is a two-dimensional advection model on isentropic surfaces, with assimilated winds driving the advection. Observed concentrations of chemical species from the UARS satellite are the data to be assimilated. This is being developed in conjunction with ongoing work on Kalman filtering at the Data Assimilation Office of the NASA/Goddard Space Flight Center. The implementation will be on a number of different Multiple Instruction Multiple Data (MIMD) massively parallel computers. The talk will focus on the strategies for domain decomposition and message passing for the key components of the filter.