ABSTRACT

Title: Observation Impact of Satellite Winds in NASA GEOS-5 Forecast System Authors: Dagmar Merkova\* and Ron Gelaro\*\* \*GMAO NASA, SSAI \*\*GMAO NASA

The impact of satellite-derived atmospheric motion vectors (AMVs) on numerical weather forecasts is examined using the GEOS-5 global atmospheric data assimilation system. An experiment is conducted in which all AMVs used operationally in GEOS-5 are replaced by AMV's produced by the U.S. Navy's NAVDAS-AR atmospheric data assimilation system. The Navy AMVs are significantly greater in number, come from multiple sources and are spatially averaged as “superobs”. Assimilation of these data yields improvements in forecast skill and increased observation impact compared with the operational AMVs. Additional experiments using various subsets of the Navy AMVs in the GEOS-5 system are used to further determine the main causes of these improvements.