

## HPC Summary for Dec 18-20 2009

This historic system was the first of several significant snowstorms to affect the Mid Atlantic and Northeast during the 2009-2010 winter. Widespread 1-2 foot snow totals were measured from Virginia and Maryland to southeastern New England. This was the heaviest December snowfall ever recorded in a number of cities, including Philadelphia, Baltimore, Washington DC, and Roanoke, VA.

A strong southern stream surface low formed in the northwestern Gulf of Mexico before crossing the Florida panhandle and tracking along the southeast Atlantic Coast. High precipitable water values from the subtropics reached into the system. A sufficiently strong and cold surface ridge extended across the Northeast and eastern Canada. A blocking ridge pattern was apparent over Greenland. The system deepened along the Carolina coast before pushing northeastward well southeast of New England as an intense cyclone. A sharp northern snowfall gradient was evident across Pennsylvania to southern New England. As the storm strengthened near the outer banks of North Carolina, a strong low level jet with Atlantic inflow was evident across the Mid Atlantic region as the heaviest snow bands occurred. Most medium range forecast models had a difficult time with this system, indicating a more offshore track with little snow forecast for the Mid Atlantic region. Forecasts came into close alignment within 3 days of the event. This storm was rated as a NESIS category 3 event.