

**SSEC/CIMSS
Seminar**

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**Water Vapor Climate Feedback from
El Niño Southern Oscillation: Model
Simulations, Reanalysis, and Observations**

The water-vapor feedback is the most important in contributing to the climate sensitivity. We estimate the water-vapor feedback to the El Niño Southern Oscillation (ENSO) from simulations of the Intergovernmental Panel of Climate Change Assessment Report 4 (AR4) models and the European Center for Medium-Range Weather Forecasts reanalysis (ERA40) for the winters (December-January-February) of 1979-2000. We find that all models and the reanalysis simulate a general pattern of the water vapor change between the ENSO warm and cold phases. Large differences of surface temperature changes among the models and the reanalysis result in a wide range of the estimated water-vapor feedback (1.7-8.7 Wm⁻²K⁻¹). The range of the estimated feedback parameters can be narrowed to 1.2-3 Wm⁻²K⁻¹ and are more consistent with previous findings if the tropical surface temperature changes, instead of the globally surface temperature changes, are used for the normalization.

Wednesday, 3 December 2008

1:00 p.m.

Room AOSS 351