

## ACOM Seminar

# Recent Insights into Cross-Tropopause Air Transport and Stratospheric Hydration by Midlatitude Overshooting Convection

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Link: <https://operations.ucar.edu/live-acom>

## ABSTRACT

Tropopause-overshooting convection in the midlatitudes (and tropics) has garnered rapidly increasing attention by the scientific community in the past decade. This increase has been driven primarily by increased availability of observations and models suitable for such analysis and broadly motivated by the extreme stratospheric water vapor enhancements possible in these storms. In the midlatitude lowermost stratosphere especially, there is increasing appreciation for the potential radiative impacts of stratospheric hydration from convection and concomitant changes in other greenhouse gases in the upper troposphere and lower stratosphere (UTLS), such as ozone. My group has devoted considerable attention to this research topic (focused almost entirely on the contiguous United States) using a combination of ground-based radar observations, geostationary satellite imagery, satellite-based profiles of UTLS composition, numerical models, and in-situ observations of UTLS composition. In this talk, I will review our efforts amongst the broader advancements in understanding of midlatitude overshooting convection and highlight some of our recent and ongoing analyses, including those leveraging data from the recently completed deployments of the NASA Dynamics and Chemistry of the Summer Stratosphere (DCOTSS) field campaign over the United States.

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