



**Atmospheric Chemistry
Observations & Modeling**

ACOM Seminar

Convective Impact on the Global Lower Stratospheric Water Vapor Budget

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

ABSTRACT

Stratosphere is extremely dry, but small changes in the humidity of the stratosphere can have a big impact on Earth's climate. Water vapor in the stratosphere is primarily determined by temperatures in the tropical upper atmosphere (between the tropospheric and stratospheric layers), but deep convective clouds that rapidly transport humid air up to this region could potentially influence stratospheric water vapor as well. While the role of deep convection as a source of stratospheric water vapor has been explored over decades, a quantitative assessment of the convective impact on a global scale is still missing. This study uses two complementary modeling approaches coupled with satellite-derived convection dataset to estimate the overall impact of deep convection on global stratospheric humidity.

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