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Feasibility Study on Observation of Water Vapor between Upper Troposphere and Lower Stratosphere using DIAL on JEM

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The need to improve the description of the global water vapour distribution extends to the upper troposphere and lower stratosphere. This is needed to improve our understanding of stratosphere/troposphere exchanges. Feedback processes linking the various components need to be better understood to realistically simulate, for instance, the level of increase of water vapour in a global warming scenario. For both the climate and numerical weather prediction communities, the specific need for improved vertical coverage and quality of water vapour observations is particularly evident. We propose on observation of water vapor between upper troposphere and lower stratosphere using DIAL on standard payload of JEM exposed facility.

Keywords: water vapor, upper troposphere, lower stratosphere, lidar, JEM