SPARC water vapor assessment: establishing steps for producing a climate data record for upper tropospheric and stratospheric water vapor

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Water vapor in the upper troposphere and stratosphere has been shown to be an important player from a climatic standpoint. It is a key radiative gas and plays a role in stratospheric ozone chemistry. Changes on the order of 10% have been shown to have an impact on surface temperature. However, global long-term in situ observations are sparse, and satellite observations are not necessarily consistent. Producing even a zonal average long-term time series for climate studies is a daunting task. In this talk we outline the need for such a data set, show some of the problems involved in creating the data set, and propose a way forward.