## Monitoring of Water Vapor in the Stratosphere of Jupiter with the Odin Space Telescope

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The Infrared Space Observatory (ISO) has detected water vapor in the stratospheres of the giant planets in 1997. The presence of the atmospheric cold trap implies an external origin for  $H_2O$  (interplanetary dust particles, sputtering from the satellites and/or rings, large comet impacts). In the case of Jupiter, the sources of water could either be IDP or the Shoemaker-Levy 9 comet impacts. Observing the evolution in time of the  $H_2O$  abundance in Jupiter's stratosphere is a way to differentiate the IDP and SL9 sources.

The sub-millimetre telescope SWAS has observed Jupiter's  $H_2O(1_{10}-1_{01})$ line in 1999 and 2001. Besides, the Odin space telescope has carried out a monitoring of this line since its launch in 2001 until 2009. Comparison between these different observations shows a decrease of the water line contrast after 2005. We have analysed the spectra with a time-dependent photochemical model coupled to a radiative transfer model. The results and implications on the origin of  $H_2O$  in Jupiter's stratosphere will be presented and discussed.