# Photochemistry in the jovian atmosphere

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In order to obtain a vertical profile of the main hydrocarbons and oxygen bearing compounds, Jupiter atmosphere is being investigated using a one dimensional, steady state photochemical model. This model includes a complete photochemical scheme that allows interaction between hydrocarbons and oxygen compounds, studies in a very detailed way transport processes (molecular and eddy diffusion) and condensation processes, takes into account an influx of external oxygen, and uses updated values obtained by laboratory measurements for reaction rates and photoabsorption cross sections.

This work is done in the frame of the Herschel Space Observatory and the Key-Programme Guaranteed Time "Water in the Solar System". It is planned to obtain data on the Giant Planets' atmospheres with PACS, SPIRE and HIFI. Thus, the model here presented will be used to compare observational and theoretical results, in order to constrain the parameters used, specially the influx of external oxygen.

Keywords: Jupiter; Photochemistry; Herschel Space Observatory.

## References

[1] P. Hartogh et al., *Planet. Space Sci.* **57**, 1596 (2009).