



Three-dimensional modelling of Venus photochemistry

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We have developed a new code of the Venus atmospheric chemistry based on our photochemical model already in use for Mars (e.g., Lefèvre et al., *J. Geophys. Res.*, 2004). For Venus, the code also includes a parameterized treatment of cloud microphysics that computes the composition of sulphuric acid droplets and their number density based on a given droplet size distribution in altitude. We coupled this photochemical-microphysical package to the LMD general circulation model of Venus (Lebonnois et al., *J. Geophys. Res.*, 2010) with a sedimentation module recently added. We will describe preliminary results obtained with this first three-dimensional model of the Venus photochemistry. The space and time distribution of key chemical species as well as the modelled clouds characteristics will be detailed and compared to observations performed from Venus Express and from the Earth (e.g. Knollenberg and Hunten, *J. Geophys. Res.*, 1980 ; Wilquet et al., *J. Geophys. Res.*, 2009 ; Sandor et al., *Icarus*, 2012).