



## **Global simulation of UV atmospheric emissions on Mars**

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Mars UV atmospheric emissions such as the CO<sub>2</sub>+ UV doublet, the CO Cameron bands (both in the dayside) and the NO bands (in the nightside) are systematically observed by SPICAM on board Mars Express and IUVS on board MAVEN. The study of these atmospheric emissions allows the determination of the temperature and density in the Martian upper atmosphere, and helps to constrain the thermospheric circulation. While different models have been developed to study these atmospheric emissions, most of them are one dimensional and make a number of assumptions concerning the underlying neutral atmosphere and ionosphere.

Within the H2020 project UPWARDS we aim at including models of these atmospheric emissions into a state-of-the-art Global Climate Model for the Martian atmosphere, the LMD-MGCM. This will allow for a self-consistent description of these atmospheric emissions and for the characterization of their different variability sources. Comparisons with observations will allow to retrieve information about the temperature and density in the Martian upper atmosphere. Here we will present the first results concerning the simulation of these UV emissions and the first comparisons with observations.

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