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Analysis and modelling of SPICAM data onboard Mars Express

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For more than three years SPICAM UV spectrometer onboard ESA mission Mars Express has been successfully monitoring the upper atmosphere of Mars in the range 118-320 nm. We will present the preliminary results concerning the numerical modelling of Mars' dayglow through the computation of UV emission lines such as CO Cameron bands and N_2 Vegard-Kaplan bands. The theory underlying this modelling uses Boltzmann's statistical kinetic and fluid approaches to yield electron/ion density and temperature profiles as a function of altitude as well as observable variables like the volume emission rates. The outputs of the model can be directly compared to the processed SPICAM data. A few characteristic orbits are then chosen for analysis in order to compare with the numerical modelling.