



Latitudinal comparison of clouds vertical profiles for Saturn's atmosphere through the Cassini/VIMS data.

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A simple study of the Saturn's clouds vertical profile is here presented using VIMS images.

VIMS (Visible Infrared Mapping Spectrometer), one of the instruments on board the Cassini spacecraft orbiting around the ringed planet since July 2004, is an image spectrometer able to show simultaneously a scene with the relative spectral information of the target under observation, covering the visible and near infrared range between 0.3 and 5.2 microns.

A Radiative Transfer (RT) model has been developed to simulate the radiance of the planet and a spectral database has been created in order to fit the instrument spectra.

In the spectral interval 1.0 - 3.5 microns, as VIMS spectra are very sensitive to the aerosols vertical distribution in the upper troposphere and lower stratosphere, different levels of aerosols and clouds have been simulated to reach a best fit with the signal.

On the other hand, in the thermal part of the spectrum (4.4-5.2 microns), where the instrument sounds the deeper atmospheric levels, the RT model reveals the need for thick deep clouds in order to fit the data.

Finally, a comparison between different latitude in the southern hemisphere has been carried out and the results show the existence of high opacity clouds at low and middle latitude with a relatively haze-free zone after near -60°.