

A comparative study of Saturn's icy satellites spectrophotometric properties by Cassini/VIMS

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The main spectral properties of Saturn's icy satellites are investigated through the hyperspectral data collected by VIMS (Visual and Infrared Mapping Spectrometer) in the VIS-NIR range (0.35-5.1 micron) from July 2004 to nowadays. In this work we make a comparative analysis of more than 500 full-disk spectra obtained at different phase angles and leading-trailing coverage for 14 satellites (Mimas, Enceladus, Tethys, Dione, Rhea, Hyperion, Iapetus, Janus, Epimetheus, Telesto, Calypso, Atlas, Prometheus, Pandora). The amount of contaminants (organics and tholins) on the surfaces is estimated thanks to the visible spectral slopes; abundance of water ice and particle sizes are retrieved through the 1.5, 2.0 and 3.0 micron absorption band strengths. We present here also preliminary phase curves and mean full-disk spectra. This work is supported by an ASI (Italian Space Agency) grant.