



Haze above the clouds on the night side of Venus from VIRTIS-M VEX observations

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VIRTIS-M –mapping spectrometer on Venus Express, worked on orbit around Venus from 2006 to 2009 years. There were obtained a lot of spectacular results on the night side of Venus in two geometries of measurements: nadir and limb modes. Nadir data don't allow obtaining vertical profile of aerosol, but make possible to map the upper boundary of the clouds. Limb data has an advantage in the air mass, which exceeds by a factor of 50 comparing to nadir data, giving possibility to observe even very thin hazes and obtain vertical profile. Polar orbit of Venus Express with pericenter at 75 N latitude allows to carry out limb measurements in the northern hemisphere. From the distance of 15 000 km to the planet the vertical haze profile is obtained with vertical resolution of 2.5 km. The observed haze in the spectral windows from 1 to 2.3 μm scatters the thermal radiation of the lower atmosphere. In the 4-5 μm range we observe the thermal emission of the haze parallel with scattered thermal emission of the upper clouds. Preliminary overview of the data shows different character of the haze at low and high latitudes: at high latitudes a haze typically is observed as a layer centered at altitudes 75-85 km. Vertical opacity profiles and estimation of haze properties are obtained. This work is in progress.

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