

Probing internal Cloud Properties from Space

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Novel UV/vis satellite instruments measure the backscattered solar radiation with moderate spectral resolution (FWHM 0.2 – 0.4 nm). Thus, in addition to the observation of the broad band radiance, they also allow to retrieve the spectral signatures of many atmospheric trace gases and of rotational Raman-scattering (the so called Ring effect). For trace gases with known (and constant) atmospheric concentrations like molecular oxygen and its dimer O₄, it is in particular possible to derive information on the atmospheric light path distribution. This information is complemented by the analysis of the Ring effect. We present simultaneous measurements of the Ring effect and the O₄ and O₂ absorptions for different cloudy scenes and give estimates of the light path distributions inside the clouds.