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Abundance measurement of oxygen compounds and aerosols in Titan's stratosphere by Cassini/CIRS.

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Following the safe arrival of the Cassini/Huygens mission in the Saturnian system in July 2004, the Cassini orbiter has now made several close flybys of Saturn's largest moon, Titan. Measurement of the abundance, and spatial variation, of oxygen compounds such as CO, CO_2 and H_2O in Titan's atmosphere is a key goal of the Cassini Composite Infrared Spectrometer (CIRS) which is a pair of spectrometers covering the far (10-600cm^{-1}) and mid (600-1400cm^{-1}) infrared spectrum at an apodized spectral resolution as high as 0.5cm^{-1}. In particular the determination of the vertical distribution of oxygen compounds can indicate whether the source of oxygen in Titan's atmosphere is external or internal.

Using a combination of nadir and limb CIRS observations, preliminary results in determining the vertical profiles of some of these oxygen compounds will be presented. In addition, in order to make these retrievals, good modelling of the haze and possible clouds in Titan's atmosphere is required and preliminary progress in retrieving these aerosols will also be outlined.