In 2010 a whole Saturnian year has been completed since the Voyager visit on 1980. After Voyager and a series of ground-based observations, the Cassini-Huygens mission has entirely revolutionized our perspective of Titan, Saturn's largest satellite, since its arrival in the Saturnian system in July 2004. Titan's atmosphere and surface present many similarities with the Earth, harbouring a dense dinitrogen (98%) atmosphere, rich in methane (1.4%) and other organics in combination with a diverse surface curved by terrestrial-like features.

By comparing all the available space data pertaining to the neutral atmosphere of Titan (Cassini/CIRS, Voyager/IRIS and ISO/SWS essentially), we can therefore look for temporal variations of its temperature and composition. These spectra are analysed by using a radiative transfer code [1] and then compared also with ground- and/or space-based acquisitions. We then also compare these results with other inferences from the Voyager missions [2] and other ground/space-based observations [3] to obtain information as to the interannual variations and seasonal effects on Titan.

Studying Titan's organic budget by the Cassini-Huygens instrumentation will enable scientists not only to understand the origin, evolution and dynamics of its atmosphere, but also to investigate its astrobiological potential. We will also discuss current models and possible future *in situ* exploration that could help us better understand this complex environment.