

Calibration of the neutral thermosphere of Venus with Venus Express ionosphere measurement

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Electron density profiles at Venus are measured by the Venus Express radio science experiment since mid-2006. A few profiles characterized by different solar zenith angles and latitudes are analysed in this study and compared with a one-dimensional coupled fluid-kinetic ionosphere model. We explain an original method with which is it possible to retrieve the carbon dioxide and atomic density profiles from the comparison between data and model. This method has been applied successfully for the thermosphere and ionosphere of the Earth at high-latitudes in 1996. These indirectly retrieved profiles are then compared with density data acquired by the SOIR and UV channels of the Venus Express SPICAV instrument.