

Submm wave sounding of the Venusian atmosphere

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Submm wave remote sensing has been demonstrated to be a powerful tool for the investigation of Earth's atmospheric physics and chemistry. Applied to Venus it would provide highly accurate 3-d fields of Doppler winds, temperatures and minor species from above the 1 bar level up to about 130 km altitude with scale height vertical resolution. Based on Rosetta and Herschel Space Observatory heritage, a 10 kg class submm wave instrument is described and radiative transfer and retrieval simulations of the atmospheric parameters including error calculations are presented.