



Sulfuric acid vapor in the atmosphere of Venus as observed by the Venus Express Radio Science experiment VeRa

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The cloud deck within Venus' atmosphere, which covers the entire planet between approx. 50 and 70 km altitude, consists mostly of liquid and gaseous sulfuric acid. The gaseous part increases strongly just below the main clouds and builds an approx. 15 km thick haze layer of H₂SO₄. This region is responsible for a strong absorption of radio waves as seen in VeRa radio science observations. The absorption of the radio signals during occultations is used to derive the abundance of gaseous sulfuric acid. VeRa probes the atmosphere of Venus since 2006 with radio signals at 13 cm (s-band) and 3.6 cm (x-band) wavelengths. The collection of nine years of radio science data provides a picture of the global distribution of the sulfuric acid vapor distribution within Venus' atmosphere. We present H₂SO₄ profiles retrieved with VeRa and compare those with H₂SO₄ profiles observed by previous missions.