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Latitudinal distribution of HDO above the Venus's clouds

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The abundance of HDO in the Venus' dayside atmosphere above the clouds was measured by ground-based 2.3 μm spectroscopy for 4 days. The latitudinal distributions found show no significant structure. The latitudinal average of mixing ratio of 2.3 ppm at a presentative height of 62-67 km is consistent with previous measurements. According to previous measurements, the HDO/H₂O ratio in the height region 30-40 km and higher than 80 km in Venus' atmosphere is 120 times and 250 times telluric ratio respectively. In this works, the ratio of HDO/H₂O in the height region 62-67 km calculated with Pollack's model is 160 times that on Earth and the vertical distribution is found.

Keywords: Venus, HDO