



Venus wind regime at clouds top

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An international campaign of wind measurements in Venus' mesosphere (70-120 km) has been set up in support of Venus Express in 2007. From the S/C variation of retrograde, superrotating zonal winds (RSZ) is constrained from cloud motion monitoring by both VIRTIS-M and VMC, thermal field measurements and a qualitative description of the circulation at 95 – 110 km is obtained from the morphology of the O₂ and CO₂ emission mapped by VIRTIS. However, none of the previous experiments is able to directly measure atmospheric circulation. Using Doppler winds in the visible range (solar Fraunhofer lines and Venus CO₂ absorption bands at 782, 788 and 869 nm) with OHP/1.93m/Sophie on May 28-June 1, 2007 (0.38-0.69 μm, solar), and CFHT/3.60m/ESPaDOnS on July 2-4, and Sep 30 2007 (R = 80000, 0.37-1.05 μm, solar+CO₂), we mapped the wind retrograde regime and its temporal variation within 1-2 scale heights above clouds top. The two sets of lines measure the day-to-day variations of the wind gradient, bringing quantitative constraints on the vertical transport of angular momentum and wave activity in the lower mesosphere.