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Variability of SO_2 above the clouds of Venus using *Venus Express*/SPICAV-UV in nadir mode

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Since the beginning of the *Venus Express* mission in 2006, the SPICAV spectrometer has collected numerous spectra in the UV range (170 to 320 nm, $R \sim 200$). Using this instrument in nadir mode, we were able to monitor variations of the column density of sulfur dioxide above the $\tau_{\mathrm{aerosols}} = 1$ level thanks to its prominent absorption band between 200 and 240 nm, where spectroscopic variations of the upper clouds and hazes cause minimal distortion of the spectra. Measurements have been performed at various latitudes and local times, and the following conclusions could be made : (1) There is significant short-scale variability of SO_2 ($\sim 5^\circ$ of latitude); (2) column densities at high latitudes are one order of magnitude lower than in equatorial and mid-latitude regions, with a significant correlation with the cloud top altitude measured in the IR. Typical abundances are in agreement with the SOIR measurements from Belyaev et al. (2008) ; (3) the peak column-density is steadily decreasing with local solar time, pointing to photochemical destruction of SO_2 during the day on a typical timescale of $\sim 10^5$ s. These results are currently under press.