NIGHTSIDE WINDS AT THE MIDDLE-TO-LOW CLOUDS OF VENUS WITH AKATSUKI/IR2 AND GROUND-BASED OBSERVATIONS.

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We present the numerical results of the wind speeds at the night side lower clouds of Venus during the first year of observations by JAXA’s mission Akatsuki. The zonal and the meridional components of the winds were calculated with cloud tracking using pairs and sequences of images of Venus acquired by the camera IR2 using the 2.26-μm filter. A total of 466 images from 22 of March to 31 of October of 2016 and spatial resolutions ranging 10-80 km per pixel were used to infer more than 230,000 wind speeds with both manual and automatic techniques of template matching, with a total of 2,277 wind vectors being obtained with the manual procedure. The meridional profiles for both components are found to be consistent with the results from the Venus Express mission during 2006-2008, although stronger wind variability is found at equatorial latitudes. Conversely to past observations, local time dependence is found at the night side lower clouds, with zonal speeds being accelerated along the early night. An analysis of the decadal variation of the low-latitude winds is presented for the first time combining in situ and cloud tracking measurements, with an oscillation of about 30 years being apparent between 1978 and 2017.

