Supporting Information for "Seasonal dependency of the Solar Cycle, QBO, and ENSO effects on the interannual variability of the wind DW1 in the MLT region"

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1. Figure S1 shows the mean zonal and meridional winds from HWM within ±50° latitudes at 97.5 km during ∼ 65 days.

2. Figure S2 shows the DW1 (1,1) amplitudes (top) and phases (bottom) for zonal winds at 97.5 km.

Introduction

Since it is hard to directly compare the derived and the "observed" DW1 amplitude and phase, two datasets of vector winds are created and then projected to the Line of Sight (LOS) direction of the TIDI measurements to test the performance of fitting the LOS winds.

Figure S1 shows the HWM means during the ∼65 days. Figure S2 shows the DW1 (1,1) component derived from the TIDI LOS measurements on Day 71 of 2009 in this

study. Thus (1) a dataset of vector winds can be created by adding the constructed DW1 field and the HWM means. The LOS winds were then calculated by projecting the vector winds to the LOS direction of the TIDI measurements at 97.5 km during this period. The amplitude and phase were derived and are shown in Figure S2. (2) As a second dataset, a Gaussian noise with a standard deviation of 25 m/s was added to the former dataset of LOS winds. The derived amplitude and phase are shown in Figure S2.

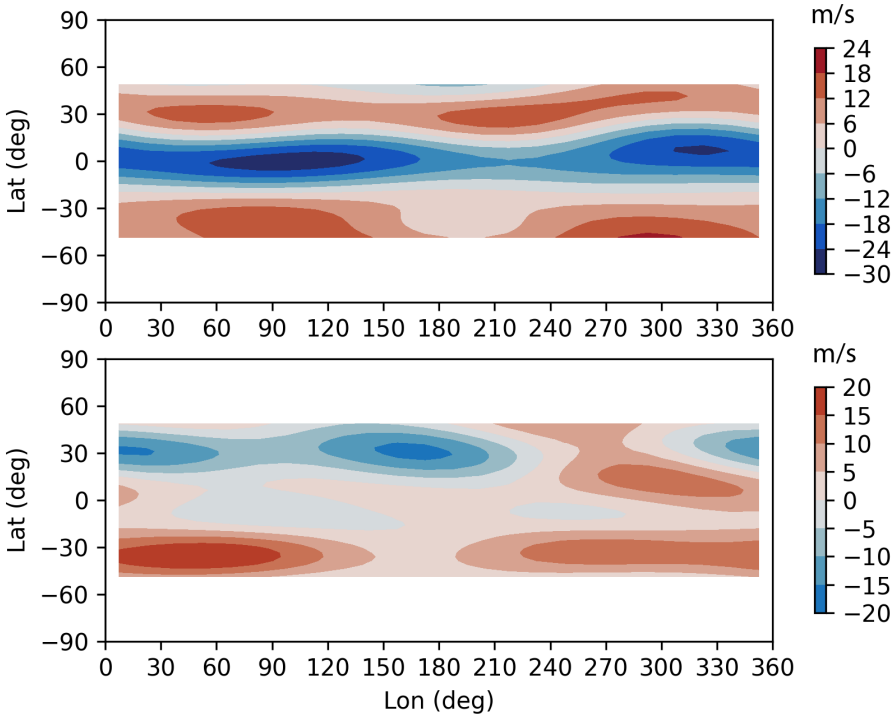


Figure S1. Averaged zonal (top) and meridional (bottom) winds from HWM within ±50° latitudes at 97.5 km during ∼ 65 days.

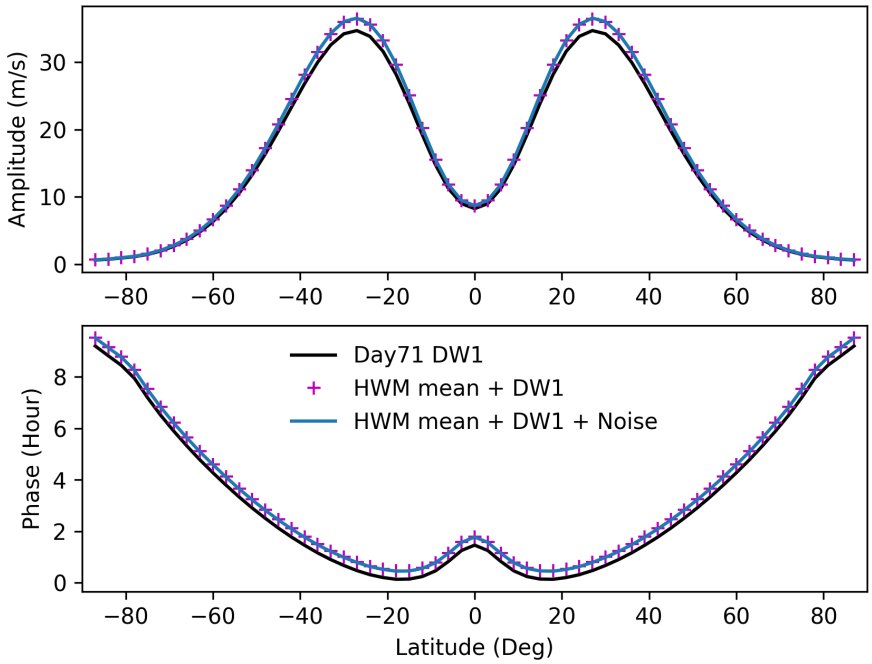


Figure S2. DW1 amplitudes (top) and phases (bottom) for zonal winds at 97.5 km altitude. The black solid lines represent the DW1 (1,1) amplitude and phase derived from the TIDI LOS measurements on Day 71 in this study; the pluses represent the results derived from #1 dataset; the blue solid lines represent the results derived from #2 dataset.