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**Application of the SOFDI wind data for assessing the performance of models** SOVIT KHADKA, ANDREW GERRARD, JOHN MERIWETHER, New Jersey Inst of Tech — Second-generation, Optimized, Fabry-Perot Doppler Imager (SOFDI), a triple-etalon Fabry-Perot interferometer, is designed to measure both day and nighttime thermospheric winds from OI 630-nm emission. The SOFDI provides coverage of the ionosphere/thermosphere in the low-latitude region and is currently operating at the Huancayo, Peru near the geomagnetic equator. We present a comparative analysis of the observed SOFDI wind data and several model results, including, but not limited to, Horizontal Wind Model 2014 (HWM-14), Coupled Thermosphere Ionosphere Plasmasphere Electrodynamics (CTIPE) model, Whole Atmosphere Model (WAM), Magnetic mEridional NeuTrAl Thermospheric (MENTAT) model, and SAMI3 model. Here, the performances of these models are examined by comparing their outputs to the direct-measured thermospheric winds using the SOFDI. Finally, we investigate and discuss the sources, drivers, and effects of the wind variability in the low-latitude thermosphere from observational and modeling perspectives.

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