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Simulation results from a global magnetohydrodynamic model of the solar corona and solar wind are compared with Parker Solar Probe (PSP) observations during its first five orbits. The fully three-dimensional model is based on Reynolds-averaged mean-flow equations coupled with turbulence transport equations. The model includes the effects of electron heat conduction, Coulomb collisions, turbulent Reynolds stresses, and heating of protons and electrons via a turbulent cascade. Turbulence transport equations for average turbulence energy, cross helicity, and correlation length are solved concurrently with the mean-flow equations. Boundary conditions at the coronal base are specified using solar synoptic magnetograms. Plasma, magnetic field, and turbulence parameters are calculated along the PSP trajectory. Data from the first five orbits are aggregated to obtain trends as a function of heliocentric distance. Long-term temporal averages of these trends are computed to infer the properties of the ambient solar wind during solar-minimum. Comparison of simulation results with PSP data shows good agreement, especially for mean-flow parameters.
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