**Using a 3D spherical plasmoid to interpret the Sun-to-Earth**

**propagation of the 4 November 1997 CME event**

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We present the time-dependent propagation of a Sun-Earth connection event that occurred on 4 November 1997 using a three-dimensional (3-D) numerical magnetohydrodynamics (MHD) simulation. A global steady state solar wind for this event is obtained by a 3-D SIP-CESE MHD model with Parker’s 1-D solar wind solution and measured photospheric magnetic fields as the initial values. Then, superposed on the quiet background solar wind, a spherical plasmoid is used to mimic the 4 November 1997 coronal mass ejection (CME) event. The CME is assumed to arise from the evolution of a spheromak magnetic structure with high-speed, high-pressure, and high-plasma-density plasmoid near the Sun. Moreover, the axis of the initial simulated CME is put at S14W34 to conform to the observed location of this flare/CME event. The result has provided us with a relatively satisfactory comparison with the Wind spacecraft observations, such as southward interplanetary magnetic field and large-scale smooth rotation of the magnetic field associated with the CME.