Poleward Propagation of Interannual and Decadal Fluctuations in Atmospheric Angular Momentum (AAM) and Sea Surface Temperature (SST): Links among the Solid Earth, Atmosphere and Ocean Subsystems

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In an earlier study incorporating zonally and vertically averaged data, Dickey *et al.* (1992, *Nature)* found evidence for globally coherent poleward propagation of interannual fluctuations in atmospheric angular momentum (AAM), associated with the El Nino/Southern Oscillation (ENSO) cycle. Using ensemble model runs generated by the National Meteorological Center General Circulation Model, Medium Range Forecast Version 9 (NMC MRF9 GCM), Mo et al. (JGR, 1997) determined that results indicate that these structures are not caused by enhanced or suppressed convention alone, but are related to SST variations. In a later study of Dickey *et al.* (1999, *GRL*), the impact of the 1997-1998 ENSO event was presented in the context of axial Earth-atmosphere angular momentum exchange utilizing length of day (LOD), Southern Oscillation Index (SOI) and atmospheric angular momentum (AAM) data; the analysis of equal-area latitudinally belted AAM from the NCEP reanalysis (1958-98) revealed slow global coherent poleward propagation of angular momentum over this time regime. Here, we document a similar pattern in the zonally averaged SST and explored the relationship between sea surface temperature (SST) and AAM.

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