

Joint IPRC/Oceanography Seminar

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"EOF Analysis of Global Sea Surface Temperature"

Empirical orthogonal function (EOF) analysis of global sea surface temperature (SST) yields the dynamical modes in which interannual variability associated with ENSO, the lower frequency variability associated with the Pacific decadal oscillation (PDO) and the Atlantic multidecadal oscillation (AMO). However, owing to the restriction of spatial and temporal orthogonality between different EOFs, these modes are mixed with other, and also mixed with the signature of global warming, leading to the confusion and challenge to understand their real meaning and physical mechanisms. Here, we introduced a pairwise rotations of selected principal components of global SST, which is possible, without recourse to filtering, to recover a monotonic global warming signature along with dynamical modes, each with its own distinctive frequency signature, that resemble ENSO, the PDO, and the AMO. The application of this analysis protocol on identifying the ingredient of Interdecadal Pacific Oscillation is presented.

Thursday February 9th, 2017 3:00 p.m. MSB 100