Eastern and Central Pacific types of ENSO – A new classification method

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In order to clearly classify El Niño–Southern Oscillation (ENSO) events into eastern Pacific (EP) and central Pacific (CP) types, we develop two new indices defined as pattern correlation coefficients (PCCs) between monthly sea surface temperature (SST) anomalies (SSTAs) and first two leading empirical orthogonal function modes of tropical Pacific($20\circ$S–$20\circ$N, $110\circ$E–$70\circ$W) SSTAs. These new indices not only show close relationships with ENSO indices derived from several previous methods, but also demonstrate reasonable abilities to distinguish between two types of ENSO event. The major characteristic features of the EP-type and CP-type ENSO forcings are well captured from SST responses regressed onto each new index. Furthermore, the monthly frequencies of occurrences derived from two indices are quite similar to variation patterns of phase-locking behaviours of two types of ENSO event.
Reference: Jeong H. I. and J.-B. Ahn, 2017: A new method to classify ENSO event into eastern and central Pacific types, Int. J. Clim., 37, 2193-2199, DOI: 10.1002/joc.4813