



Epochs of phase coherence between ENSO and Indian monsoon

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We study the difference of the phase dynamics between El Niño/Southern Oscillation (ENSO) and the Indian Monsoon on inter-annual time scales. Distinct epochs are identified, especially two intervals of phase coherence, 1886-1908 and 1964-1980, corroborating earlier findings from a new point of view and with a better time resolution. A significance test shows that the inferred coherence is very unlikely to be the result of stochastic fluctuations. We also detect so far unknown periods of coupling which are invisible to linear methods. These findings suggest that the decreasing correlation between ENSO and Indian monsoon during the last decades might be partly inherent to the ENSO/Monsoon system. The high time resolution of the method enables us to present an interpretation of how volcanic radiative forcing could cause the coupling.