

**Sea surface Temperature: Diurnal variability and ENSO**

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Diurnal variability in sea surface temperature is highly variable in space and time. However, when multi-year time series of diurnal SST (dSST) are analyzed using EOFs and anomaly time series, significant large-scale and long-lasting variability can be seen. Some of this variability is due to events such as MJOs, other variability is due to seasonal changes (including monsoonal variability in the Indian Ocean), and still other patterns of variability are due to ENSO patterns. For this study, the relationship between dSST and ENSO variability in the Indian and Pacific Oceans is explored using simple lag correlation techniques. Specific areas of interests were chosen, and the long term variability of diurnal anomalies (averaged in space and time) is explored in juxtaposition with ENSO events through widely used indices. Statistically significant lag and lead times have been found between dSST anomaly time series and the Nino 3.4 index. This finding indicates that a better understanding of the atmospheric parameters that impact diurnal variability, such as large-scale changes in solar radiation and wind patterns associated with ENSO, is important. Thus, diurnal variability and the associated atmospheric parameters may provide additional useful information relating to ENSO predictability.