

## **The ENSO continuum: Predictability and change of the background state**

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### **Abstract:**

It will be shown that the different flavours of El Niño, much discussed in recent literature, represent the end members of a continuum. This allows to construct rather simple forecast methods for the maximum sea surface temperature anomalies based on potential temperature anomalies of the subsurface ocean in winter before the mature ENSO anomaly and cumulative zonal wind anomalies over the equatorial western and central Pacific. Recent changes in the base state (strong warming of the Indian Ocean and the west Pacific warm pool) led to changes in predictability due to a strong change in zonal wind (Walker and Hadley cells). Prediction of seasonal anomalies in higher latitudes will strongly depend on constructive or destructive superposition of Rossby waves generated from the tropical SST anomalies and mid-latitude Rossby waves influenced by the stratospheric polar vortex.