

Indices for the Two Types of ENSO

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To better understand the two types of ENSO, it is important to be able to identify which type each ENSO event is. Various identification methods have been developed which define different indices to separate these two types of ENSO. Some of the methods are based on the locations of the maximum sea surface temperature (SST) anomalies while others are based on the structures of the SST anomalies. While the SST is the major quantity used to define indices for the two types of ENSO, subsurface ocean temperatures and other ocean variables (such as salinity) have also been used. The inconsistencies among these index methods and the difficulties in using the indices to clearly separate the two types of ENSO may be due to the fact that all the current methods are phenomena-based in their type classification. These methods do not reflect the physical processes responsible for the generation of the each type of the ENSO; for instance, the thermocline variation process for the EP ENSO and the zonal advection process for the CP ENSO. Some kinds of process-based classification method are needed to construct indices for the two types of ENSO.

In this poster, we review some of the existing indices for the two types of ENSO, discuss some major issues related to the index developments, and present a pattern correlation method to construct indices for the two types of ENSO.