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## Individual and combined impacts of ENSO and East Asian winter monsoon on the South China Sea cold tongue intensity

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A low sea surface temperature (SST) region extends southward in the central part of southern South China Sea during boreal winter, which is called the South China Sea cold tongue (SCS CT). This talk presents an analysis of the factors of interannual variation of SST in the SCS CT region and the individual and combined impacts of El Niño-Southern Oscillation (ENSO) and East Asian winter monsoon (EAWM) on the SCS CT intensity. During years with ENSO alone or with co-existing ENSO and anomalous EAWM, shortwave radiation and ocean horizontal advection play major roles in the interannual variation of the SCS CT intensity. Ocean advection contributes largely to the SST change in the region southeast of Vietnam. In strong CT years with anomalous EAWM alone, surface wind-related latent heat flux has a major role and shortwave radiation is secondary to the EAWM-induced change of the SCS CT intensity, whereas the role of ocean horizontal advection is relatively small. The above differences in the roles of ocean advection and latent heat flux are associated with the distribution of low level wind anomalies. In anomalous CT years with ENSO, low level anomalous cyclone/anticyclone-related wind speed change leads to latent heat flux anomalies with effects opposite to shortwave radiation. In strong CT years with anomalous EAWM alone, surface wind-related latent heat flux anomalies are large as anomalous winds are aligned with climatological winds.