Variabilities of sea level components over the South China Sea based on multi-sensor satellite observations

Jin Sha and Xiaoming Li
Key Laboratory of Digital Earth Science, Aerospace Information Research Institute, Chinese Academy of Sciences, China (shajin@radi.ac.cn)

Seawater temperature and salinity are the two key parameters related to the regional sea level variability. In this study, the spatial-temporal variabilities of the thermal and halo steric height over the South China Sea (SCS) are investigated using multi-sensor satellite remote sensing products, in-situ measurements and reanalysis. The sea surface temperature and salinity products are used to reconstruct the upper layer sea level components, and the relative contribution of these two components are quantified. It is revealed that the thermal and halo components vary in an out-of-phase pattern, and dominant different regions within SCS. Variabilities of the sea level components on different timescale are further analyzed, and the linkage with large scale processes, such as the indo-pacific warm pool, will be presented.