

Reconstruction of the long-term satellite-derived sea surface temperature including error maps in the South China Sea

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The AVHRR (Advanced Very High Resolution Radiometer) sea surface temperature is very useful for researches in oceanography because of its high resolution. An AVHRR limitation is the high missing data percentage due to cloud coverage. In the South China Sea, the average missing data is usually more than 80%, especially more than 95% in the regions near the Borneo Island. In this study, we use DINEOF tool (Data INTERpolating Empirical Orthogonal Functions) to reconstruct a daily night-time AVHRR data set with horizontal resolution of 4km spanning from 1990 to 2009. Error maps for the reconstructed sea surface temperature are also calculated. Besides, a comparison between the result and in situ data is implemented. From the long-term reconstructed data, we can monitor the inter-annual variability of circulation, eddies and upwelling. The EOF analysis shows that the first three modes explain about 95% of seasonal variability.

References

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