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Climatology and Variability of the Indonesian Throughflow in an Eddy-permitting Oceanic GCM

HAILONG LIU, WEI LI and XUEHONG ZHANG

State Key Laboratory of Numerical Modeling for AtmosphericSciences and Geophysical Fluid Dynamics (LASG), Institute ofAtmospheric Sciences, Hua Yan Li Building 40, Beijing 100029, China

A quasi-global eddy permitting oceanic GCM, LICOM1.0 (LASG/IAP Climate system Ocean Model), was run with the forcing of ERA40 daily wind stress from 1958 to 2001. The modeled ITF is reasonable in respect of both its water source and major pathways. Compared with the observation, the simulated annual mean and seasonal cycle of the ITF transport are fairly realistic. The interannual variation in the Pacific plays a more important role in the interannual variability of the ITF transport. The relationship between ITF and IOD also reflects the influence of ENSO. However, the relationship between the ITF transport and the interannual anomalies in the Pacific Ocean and the Indian Ocean does not fix. During some year, e.g. 1994, the effect of the strong IOD on the ITF transport is more than that from ENSO.

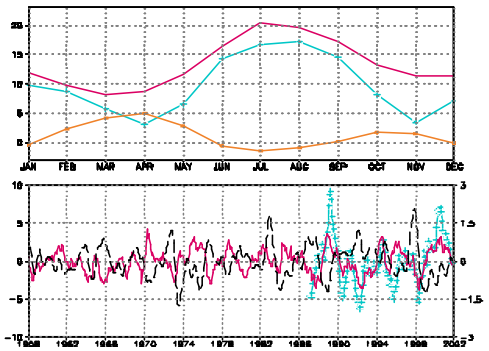

Figure 1. The simulated (solid) and observed (cross) upper 700m transport. Unit: Sv. (a) monthly mean climatology. The dotted line stands for the transport of the lower layer; (b) the interannual anomalies. The dash line is the Niño3.4 index (Unit: ºC)

References (Omitted)