Abstract View

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Annual Cycle of Temperature and Heat Storage in the World Ocean

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ABSTRACT

The annual cycle of temperature and heat storage for the world ocean and individual ocean basins is described based on climatological monthly-mean temperature fields. One well-known feature observed in the fields of temperature and heat storage is the large annual cycle at midlatitudes of both hemispheres that lags the maximum of incoming solar radiation by about three months. Another major feature observed in the heat storage of the Northern Hemisphere is a large annual cycle located at about 12°N. The heat storage in this region is approximately three to four months out of phase with the annual cycle at midlatitudes of the Northern Hemisphere with the maximum at 12°N occurring around May. The annual range of heat storage at 12°N is as large as the annual range at midlatitudes of the Northern Hemisphere. In tropical oceans the 1argest variability in temperature occurs at subsurface levels and appears to be associated with large-scale redistribution of heat and displacements of the thermocline.