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Annual Heat Gain of the Tropical Atlantic Computed from Subsurface Ocean Data

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ABSTRACT

Charts are presented which show the seasonal and annual rates of heat gain of the tropical North Atlantic Ocean. These rates have been computed using subsurface oceanographic data and wind-stress data. In these computations the interseasonal rates of heat gain are determined primarily by the rate of local heating, and their magnitude, in general, is several times larger than the annual rate. The annual mean rate implies a net heat loss over much of the tropical ocean. The probable mechanism for this heat loss is an annual excess in cooling due to evaporation over heating due to the net incoming radiation. The present results show similarities to some results of previous authors who have based their calculations on bulk aerodynamical formulas and radiation estimates.

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