



## Abstract View

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# Surface Thermal Boundary Condition for Ocean Circulation Models

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### ABSTRACT

By employing a heat budget analysis appropriate to zonally and time averaged conditions within the atmosphere, it is shown that the net downward heat flux  $Q$  at the ocean's surface can be expressed as  $Q = Q_2 (T_A^* - T_s)$ , where  $T_A^*$  is an apparent atmospheric equilibrium temperature,  $T_s$  the sea surface temperature, and  $Q_2$  a coefficient determined from the zonally and time averaged data. The

latter coefficient, which is of the order of  $70 \text{ ly day}^{-1} (\text{°C})^{-1}$ , varies with latitude by as much as 20%. It is suggested that the use of the above relation as a flux-type thermal boundary condition would allow for large-scale thermal coupling of ocean and atmosphere. The more common use of specified  $T_s$  as a boundary condition clearly does not allow for such coupling.

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