ANNUAL VARIATION OF THE HEAT BUDGET

OF THE MIXED LAYER IN THE

EASTERN TROPICAL PACIFIC.

$(0-20^{\circ}S; 70-120^{\circ}W)$

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ABSTRACT

Using a definition of mixed layer based on vertical thermal gradient and constant in time, the heat content is calculated in a grid of 5 x 5 degrees in the Eastern Tropical Pacific. Also the annual and semiannual components of the heat content are obtained. The rate of change is compared with the net solar heating calculated by Weare et al.(1980) for the area.

To apply the heat conservation equation in the mixed layer, a large area was selected that contains the coastal areas of upwelling and as well as the area of Galapagos Islands. Mixing and diffusion are not included.

For the annual mean in this area net solar heating and advection, horizontal and vertical, are in balance. For the seasonal variation, in summer all the terms have the same order of magnitude. But in the winter the balance can not be made because the coastal upwelling is 10 times larger than the other terms. This behavior differs from the results obtained for a similar study in the eastern equatorial Atlantic (Molinari et al. 1983).