Sign in

AMERICAN METEOROLOGICAL SOCIETY
AMS Journals Online

AMS Home | Journals Home | Journal Archive | Subscribe | For Authors | Help | Advanced Search | Search | Go

Abstract View

Volume 13, Issue 1 (January 1983)

Journal of Physical Oceanography
Article: pp. 130–138 | Abstract | PDF (704K)

Air-Sea Interaction as a Propagator of Equatorial Ocean Surface Temperature Anomalies

Eric B. Kraus and Howard P. Hanson

Cooperative Institute for Research in Environmental Sciences, University of Colorado/N0AA. Boulder, CO 80309

(Manuscript received June 11, 1982, in final form September 23, 1982)

DOI: 10.1175/1520-0485(1983)013<0130:ASIAAP>2.0.CO;2

ABSTRACT

The westward propagation of equatorial sea surface temperature anomalies exceeds the surface drift velocity and is probably associated with propagating changes in the depth of the surface mixed layer and upper thermocline. These can be caused by equatorial Rossby waves and/or by air-sea interactions. In the present paper, it is shown that changes in the stress and heat flux associated with the passage of air over an ocean surface of variable temperature can produce a westward propagation of the temperature pattern regardless of Coriolis effects.

The phenomenon is investigated in the framework of a two-layer channel model. A physical description of the mechanism is followed by the discussion of an approximate solution to the steady state and by a linear wave analysis which deals with the propagation and modification of an initially stipulated departure from the equilibrium.

Options:
- Create Reference
- Email this Article
- Add to MyArchive
- Search AMS Glossary

Search CrossRef for:
- Articles Citing This Article

Search Google Scholar for:
- Eric B. Kraus
- Howard P. Hanson

top

© 2008 American Meteorological Society Privacy Policy and Disclaimer
Headquarters: 45 Beacon Street Boston, MA 02108-3693
DC Office: 1120 G Street, NW, Suite 800 Washington DC, 20005-3826
amsinfo@ametsoc.org Phone: 617-227-2425 Fax: 617-742-8718
Allen Press, Inc. assists in the online publication of *AMS* journals.