



## Abstract View

[Volume 18, Issue 11 \(November 1988\)](#)

### Journal of Physical Oceanography

Article: pp. 1670–1685 | [Abstract](#) | [PDF \(1.17M\)](#)

# Low-Frequency Eddy Variability at 28°N, 152°W in the Eastern North Pacific Subtropical Gyre

**Pearn P. Niiler and Melinda M. Hall**

*Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California*

(Manuscript received July 30, 1987, in final form May 19, 1988)

DOI: 10.1175/1520-0485(1988)018<1670:LFEVAI>2.0.CO;2

### ABSTRACT

A current meter mooring maintained for over three years at 28°N, 152°W, in the eastern North Pacific has yielded velocity and temperature data throughout the water column, with particularly good thermocline resolution. The flow is characterized by weak primarily westward mean velocities, with a superimposed eddy field having rms velocities ranging from 10 cm s<sup>-1</sup> in the upper thermocline to 3 cm s<sup>-1</sup> at 1000 m depth. The eddy energy is divided into two main bands: the low frequency eddies have spatial scales of 250–300 km and periods of 100–200 days, propagate southwestward, and have slightly more zonal than meridional energy. The high frequency eddies also propagate southwestward, have spatial scales of 150–175 km and periods of 40–80 days, and are strongly meridionally oriented. Vertical EOF structure calculated in the frequency domain suggests that the low frequency eddies are more wavelike (linear) in nature than are the high frequency. The entire band appears to derive energy baroclinically from a secularly varying background flow; as a function of time, the eddy heat flux tends to be down the very low frequency varying temperature gradient. Some interesting points of comparison are found with eddies in a three-layer nonlinear model of the eastern North Pacific recently described by Lee.

#### Options:

- [Create Reference](#)
- [Email this Article](#)
- [Add to MyArchive](#)
- [Search AMS Glossary](#)

#### Search CrossRef for:

- [Articles Citing This Article](#)

#### Search Google Scholar for:

- [Pearn P. Niiler](#)
- [Melinda M. Hall](#)



© 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](mailto:amsinfo@ametsoc.org) Phone: 617-227-2425 Fax: 617-742-8718

[Allen Press, Inc.](#) assists in the online publication of *AMS* journals.