



## Abstract View

[Volume 7, Issue 3 \(May 1977\)](#)

### Journal of Physical Oceanography

Article: pp. 359–364 | [Abstract](#) | [PDF \(303K\)](#)

# On the Generation of Baroclinic Rossby Waves in the Ocean by Meteorological Forces

**Lorenz Maggaard**

*Department of Oceanography, University of Hawaii, Honolulu 96822*

(Manuscript received September 14, 1976, in final form January 21, 1977)

DOI: 10.1175/1520-0485(1977)007<0359:OTGOBR>2.0.CO;2

### ABSTRACT

The generation of baroclinic Rossby waves in a continuously stratified ocean by fluctuating fields of wind stress, buoyancy flux and atmospheric pressure at the sea surface is studied by means of boundary layer theory. The internal wave field has been represented analytically in term of the generating meteorological fields and the damping influence of bottom friction. A preliminary application to an example from the eastern Pacific shows that the influence of the atmospheric pressure is negligible compared to that of the other generating agents; on the other hand, fluctuations of the wind stress and the buoyancy flux could be strong enough to generate the waves observed by Emery and Maggaard (1976). A more exacting application requires more knowledge about the meteorological fields at the sea surface and has to be left to a later investigation.

#### Options:

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

#### Search CrossRef for:

- [Articles Citing This Article](#)

#### Search Google Scholar for:

- [Lorenz Maggaard](#)

top ▲



