



Abstract View

[Volume 12, Issue 10 \(October 1982\)](#)

Journal of Physical Oceanography

Article: pp. 997–1003 | [Abstract](#) | [PDF \(515K\)](#)

A Simple Exact Treatment of the Baroclinicity-Bathymetry Interaction in a Frictional, Iterative, Diagnostic Ocean Model

Maurice Rattray Jr.

School of Oceanography, University of Washington, Seattle, WA 98195

(Manuscript received February 22, 1982, in final form July 6, 1982)

DOI: 10.1175/1520-0485(1982)012<0997:ASETOT>2.0.CO;2

ABSTRACT

A formulation of the vorticity equation in terms of Ekman, baroclinic and barotropic transports, defined such that the bottom is the reference level-of-no-motion for the baroclinic velocity, yields a topographic-Sverdrup relation for the bottom pressure anomaly. This formulation does not contain the Jacobian term relating density to bathymetry found in earlier diagnostic formulations. As a consequence the resulting deep flow pattern is not sensitive to “noise” in the density field. The effects of bottom friction are introduced by an iterative scheme.

Options:

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

Search CrossRef for:

- [Articles Citing This Article](#)

Search Google Scholar for:

- [Maurice Rattray](#)

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.