



Due to technical problems, there is a delay in posting the full text version of articles. We hope to have this resolved soon.  
In the meantime please see the PDF version of articles.

## Abstract View

[Volume 2, Issue 2 \(April 1972\)](#)

### Journal of Physical Oceanography

Article: pp. 177–183 | [Abstract](#) | [PDF \(607K\)](#)

# Thermohaline Structure and Baroclinic Flow Across the Gulf of California Entrance and in the Revilla Gigedo Islands Region

**Gunnar I. Roden**

*Dept. of Oceanography, University of Washington, Seattle 98195*

(Manuscript received May 24, 1971, in final form December 28, 1971)

DOI: 10.1175/1520-0485(1972)002<0177:TSABFA>2.0.CO;2

### ABSTRACT

The thermohaline structure, vertical stability and baroclinic flow between the Gulf of California entrance and the Revilla Gigedo islands are investigated by means of closely spaced salinity and temperature depth profiles (STD's). The outstanding feature of the upper ocean is the 10–30 m thick layer of high stability centered at about 50 m. This layer separates the tropical surface water from the thin shallow salinity minimum below, which is most pronounced between 80 and 130 m. The outstanding feature of the deep water is the marked increase in abyssal temperatures east of Isla Socorro, apparently due to heat flow.

Baroclinic flow in the Revilla Gigedo islands region is characterized by high-speed flow near capes and islands. Outflow from the Gulf of California takes place in a narrow high velocity core near its western side. The width of the high-speed core is of the order of 30 km and speeds  $>30 \text{ cm sec}^{-1}$  occur down to 700 m. The high-speed flow is accomplished by a break in the high stability layer. Inflow into the gulf occurs over a broader area, mainly in the central part. North of Isla Socorro, a strong west-northwestward setting current is observed. It is about 150 km wide, 700 m deep and has maximum speeds of  $33 \text{ cm sec}^{-1}$  just above the high stability layer. Near the island, a narrow countercurrent with speeds up to  $17 \text{ cm sec}^{-1}$  is found. Off Cabo Corrientes, a strong northwestward setting current is encountered. The current is about 100 km wide, extends to a depth of 700 m, and has a maximum speed of  $46 \text{ cm sec}^{-1}$  near the surface.

#### Options:

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

#### Search CrossRef for:

- [Articles Citing This Article](#)

#### Search Google Scholar for:

- [Gunnar I. Roden](#)



© 2009 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.

top ▲