



## Abstract View

[Volume 12, Issue 11 \(November 1982\)](#)

### Journal of Physical Oceanography

Article: pp. 1161–1168 | [Abstract](#) | [PDF \(571K\)](#)

# Interannual Variation in Sea Level near Truk Island—A Bimodal Seasonal Cycle

**Gary Meyers**

*Scripps Institution of Oceanography, La Jolla, CA 92093*

(Manuscript received March 18, 1982, in final form June 28, 1982)

DOI: 10.1175/1520-0485(1982)012<1161:IVISLN>2.0.CO;2

### ABSTRACT

The relationship between typical seasonal and interannual variations in Truk sea level is discussed. Periods of extreme low sea level occur episodically, at the same time that El Niño occurs in the eastern tropical Pacific. The episodes have a well-defined phase relative to the seasons and a persistence of one year. They mimic an annual cycle, but they do not repeat every year. Nevertheless, they distort the long-term mean seasonal cycle because they are very energetic. Complex demodulation shows that the amplitude of the annual oscillation is bimodal, the larger amplitude occurring during the episodes of low sea level. The phase is stable only when the amplitude is large. The amplitude and phase of the semiannual oscillation are stable; the range is approximately one-third as large as that of the interannual episodes. Thus, the seasonal cycle is bimodal in the sense that it is dominated by either the annual episode or the stable semiannual oscillation. The climate-related sea-level variation at Truk and other tropical islands is shown to be largely due to vertical displacement of the thermocline.

#### Options:

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

#### Search CrossRef for:

- [Articles Citing This Article](#)

#### Search Google Scholar for:

- [Gary Meyers](#)



© 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.