



Abstract View

[Volume 9, Issue 1 \(January 1979\)](#)

Journal of Physical Oceanography

Article: pp. 158–169 | [Abstract](#) | [PDF \(811K\)](#)

A Study of Tides, Setup and Bottom Friction in a Shallow Semi-Enclosed Basin. Part I: Field Experiment and Harmonic Analysis

J.H. Filloux

Scripps Institution of Oceanography, University of California at San Diego, La Jolla 92037

R.L. Snyder

Ocean Sciences Center, Nova University, Dania, FL 33004

(Manuscript received May 26, 1976, in final form July 17, 1978)

DOI: 10.1175/1520-0485(1979)009<0158:ASOTSA>2.0.CO;2

ABSTRACT

This paper is the first in a series reporting the results of a study of tides, setup and bottom friction in the Bight of Abaco, Bahamas. The paper describes three month-long field experiments, employing 15 tide gages and four weather stations distributed throughout the Bight.

The amplitude and phase of five principal tidal constituents and the M4 and M6 overtones are estimated for all stations and errors computed from a generalization/hybridization of the algorithm of Munk and Hasselman (1964) for tidal doublets. The resulting tidal distributions constitute an unusually complete data base against which to optimize the numerical models reported in Parts II and III of the series.

The relatively small amplitude of the overtones constituents along the western margin of the Bight suggests that these constituents are locally generated. Residual fluctuations are highly coherent with the wind field. Significant differential setup effects are apparent.

Options:

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

Search CrossRef for:

- [Articles Citing This Article](#)

Search Google Scholar for:

- [J.H. Filloux](#)
- [R.L. Snyder](#)



© 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.