



Abstract View

[Volume 6, Issue 1 \(January 1976\)](#)

Journal of Physical Oceanography

Article: pp. 66–75 | [Abstract](#) | [PDF \(709K\)](#)

A Solvable Model of “Shear Dispersion”

W.C. Thacker

Atlantic Oceanographic and Meteorological Laboratories, NOAA, Miami, Fla. 33149

(Manuscript received April 14, 1975, in final form July 22, 1975)

DOI: 10.1175/1520-0485(1976)006<0066:ASMOD>2.0.CO;2

ABSTRACT

Shear dispersion results from vertical shear of horizontal velocity and vertical mixing, features which cannot be included explicitly in one-layer, vertically integrated models. The parametric description of shear dispersion as effective horizontal diffusion in one-layer models is investigated by comparing analytic solutions of two-layer dispersion equations to the corresponding solutions of a one-layer diffusion equation. The diffusion description is found to be poor for times comparable with or shorter than the vertical mixing time but excellent for longer times.

Options:

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

Search CrossRef for:

- [Articles Citing This Article](#)

Search Google Scholar for:

- [W.C. Thacker](#)

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.