



Abstract View

[Volume 15, Issue 5 \(May 1985\)](#)

Journal of Physical Oceanography

Article: pp. 566–592 | [Abstract](#) | [PDF \(1.83M\)](#)

Directional Wave Spectra Measured with the Surface Contour Radar

E.J. Walsh, D.W. Hancock III, and D.E. Hines

NASA Goddard Space Flight Center, Wallops Flight Facility, Wallops Island, VA 23337

R.N. Swift and J.F. Scott

EG & G Washington Analytical Services Center, Inc., Pocomoke City, MD 21851

(Manuscript received July 9, 1984, in final form January 30, 1985)

DOI: 10.1175/1520-0485(1985)015<0566:DWSMWT>2.0.CO;2

ABSTRACT

The Surface Contour Radar is a 36-GHz computer-controlled airborne radar which generates a false-color coded elevation map of the sea surface below the aircraft in real-time, and can routinely produce ocean directional wave spectra with post-flight data processing which has much higher angular resolution than pitch-and-roll buoys. When compared with waveriders and the XERB and EDECO pitch-and-roll buoys, there is good agreement among the nondirectional spectra. There is also good agreement among the angles associated with a_1 , b_1 , and a_2 , b_2 Fourier coefficients of the spreading function for XERB, ENDECO, and the Surface Contour Radar. There are indications that the pitch-and-roll buoys in this study may have calibration problems with the magnitudes of the Fourier coefficients of the spreading function, and that the radar system determines the Fourier coefficients with significantly less noise and bias. The high spatial resolution and rapid mapping capability over extensive areas make the Surface Contour Radar ideal for the study of fetch-limited wave spectra, diffraction and refraction wave patterns in coastal areas, and wave phenomena associated with hurricanes and other highly mobile events.

Options:

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

Search CrossRef for:

- [Articles Citing This Article](#)

Search Google Scholar for:

- [E.J. Walsh](#)
- [D.W. Hancock](#)
- [D.E. Hines](#)
- [R.N. Swift](#)
- [J.F. Scott](#)



© 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.