Abstract View

Volume 14, Issue 5 (May 1984)

Journal of Physical Oceanography
Article: pp. 855–863 | Abstract | PDF (518K)

On the Determination of K_v in the Near-Surface Ocean from Acoustic Measurements of Bubbles

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(Manuscript received October 17, 1983, in final form January 9, 1984)

DOI: 10.1175/1520-0485(1984)014<0855:OTDOIT>2.0.CO;2

ABSTRACT

When wind waves break in deep water, clouds of small bubbles are produced which are diffused downwards by turbulence. We describe here how the vertical diffusion coefficient K_v of the turbulence near the sea surface may be determined from measurements of the bubbles made using a subsurface, upward-directed, high-frequency sonar. The method consists of comparing the observed distributions of scattering cross section with those which can be predicted. Existing observations are used to demonstrate the use of the technique, but are not yet sufficient to allow precise determination of K_v or of its variation with depth or wind speed.