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[Volume 16, Issue 11 \(November 1986\)](#)

### Journal of Physical Oceanography

Article: pp. 1763–1776 | [Abstract](#) | [PDF \(1.19M\)](#)

# Statistics of Internal Wave Overturning from Observations of Upper Ocean Temperature

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(Manuscript received June 21, 1985, in final form June 26, 1986)

DOI: 10.1175/1520-0485(1986)016<1763:SOIWOF>2.0.CO;2

### ABSTRACT

The seasonal thermocline in the Sargasso Sea near 30°45'N, 71°45'W was measured in July 1981 using a towed thermistor array with ~0.5 m horizontal and vertical resolution. A 200-km long section of the survey path is analyzed for overturn occurrences and the relationship of these occurrences to the ambient flow field. Our analysis shows that the probability of an overturn occurrence increases when the Richardson number of the ambient field decreases. This increase is most rapid when the Richardson number is of order unity. Our assessment of overturn processes based on calculated conditional probabilities indicates that both shear instability and advective instability are important to the generation of the overturns observed in our experiment while the symmetric instability is not.

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