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[Volume 11, Issue 6 \(June 1981\)](#)

Journal of Physical Oceanography

 Article: pp. 864–870 | [Abstract](#) | [PDF \(513K\)](#)

Satellite Determination of the Mesoscale Variability of the Sea Surface Temperature

P.Y. Deschamps and R. Frouin

Laboratoire d'Optique Atmosphérique, Equipe associée au C.N.R.S., Université des Sciences et Techniques de Lille, France

L. Wald

Centre de Télédétection et d'Analyse des Milieux Naturels, Ecole Nationale Supérieure des Mines de Paris, 06360 Valbonne, France

(Manuscript received September 5, 1980, in final form February 11, 1981)

DOI: 10.1175/1520-0485(1981)011<0864:SDOTMV>2.0.CO;2

ABSTRACT

Satellite infrared data have been used to investigate the mesoscale variability of the SST (sea surface temperature) field. A statistical analysis of the SST field has been performed by means of the structure function. Results give the equivalent power-law exponent n of the spatial variance density spectrum $E(k) \sim k^{-n}$. The exponent n was found to vary from 1.5 to 2.3 with a mean value of 1.8 in the range of scales 3–100 km which is in agreement with previous one-dimensional analysis from shipborne and airborne measurements. These observed values of n are discussed and compared with the values predicted by turbulence theories.

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DC Office: 1120 G Street, NW, Suite 800 Washington DC, 20005-3826
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