Dispersion in harbour and coastal areas

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Experimental results of turbulent flows in the sea surface near the coastline have been performed using both Lagrangian and Eulerian methods. Field tests are presented using video recordings and velocity sensors[1]. The spatial and temporal resolution is limited by the measuring instruments, which results in “filtering” out the very small scales. The experimental field-results obtained during the Vilanova i la geltru experiments [2], under reduced longshore currents and spilling/plunging breaking waves are compared with experiments performed at the Barcelona harbour. The field-measurements include several tests across the surf and enclosed zones. The measured turbulent properties are compared with macroturbulence characteristics and parameterisations [2,3]. Dispersion is measured and related to the local velocity spectra so that a generalized Richardson law may be used. Numerical models on turbulent dispersion for different spectra are compared with the measurements [4,5].


