



Experimental investigation of the relationship between HF radar measurements of currents and the dynamical properties of the upper ocean.

Philippe Fraunie

Universite deToulon (UTLN-AMU-CNRS-IRD), Mediterranean Institute of Oceanography, La Garde Cedex, France
(philippe.fraunie@univ-tln.fr, 33 4 94142417)

Forget P., Barbin Y., Bellomo L., Doglioli, *Lecuyer E., Fraunié P., Malengros D., Marmain J., Molcard A., Petrenko A., Quentin C., *Sentchev A.

Mediterranean Institute of Oceanography-MIO

UM 110 UTLN - AMU - CNRS/INSU 7294 - IRD 235 BP 20132 F-83957 La Garde cedex

*Laboratoire d'Océanologie et Géosciences

CNRS UMR 8187 LOG Université du Littoral - Côte d'Opale
32 avenue Foch, 62930 Wimereux

The increasing application of HF radio-oceanography for coastal circulation monitoring requires a validation of the radar derived current velocities using independent velocity estimates. Surface currents measured by radar, as they are relative to some finite patch of the sea (the radar cell), depend on the spatial distribution of the current within the radar cell, its time variability, its vertical structure near the surface and the presence of ocean waves.

We present an experimental investigation conducted in the NW Mediterranean to measure radial surface currents by HF radar simultaneously to the dynamical properties of the surface ocean. These latter included high resolution current profiling by ADCP, microprofiling of temperature/salinity by SCAMP and Lagrangian velocities from surface drifting buoys. All the data were GPS geo-localized. The current profiling by towed ADCP was performed along the radar beam directions.

The poster shows the first results of the experiment and presents samples of the 3D structure of the horizontal current (down to 15m and over some km²) and of the stratification. The spatial distribution of the surface currents is described from Lagrangian measurements. The radar derived surface currents are discussed on the basis of these in situ data.

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