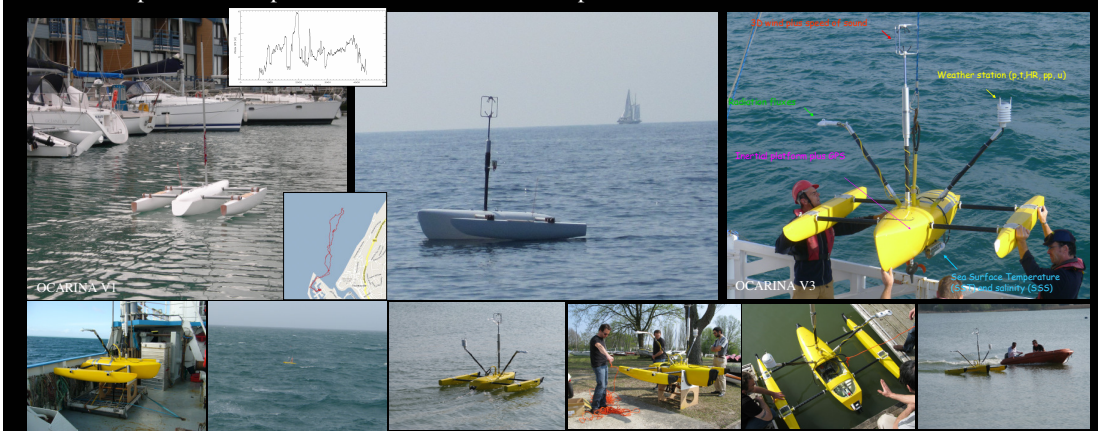


OCARINA : a new platform dedicated to Air-Sea flux estimation

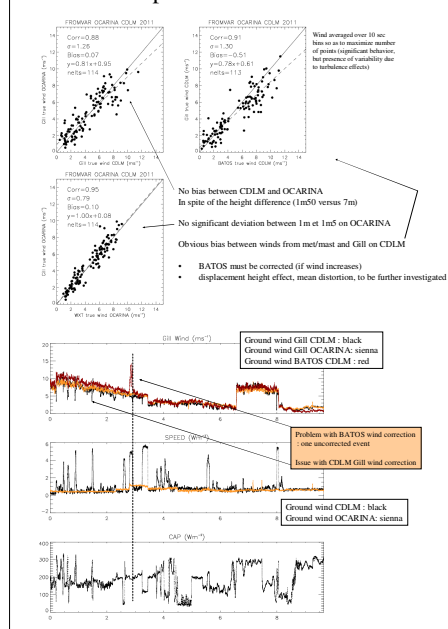
EGU Vienna, 23 April 2012, EGU2012-87, AS2.2/OS5.3

D. Bourras, C. Caudoux, L. Baggio, E. Lhuisset, P. Gilbert, J.P. Pineau, J.J. Correia, N. Geyskens, A. Cléménçon, H. Branger, L. Mortier, G. Reverdin, L. Marié, A. Weill, M. Berthet, A. Mironov, A. Weill

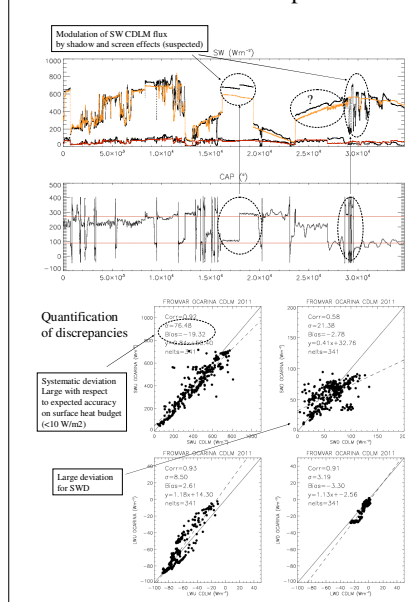
Océan Couplé à l'Atmosphère : Recherche à l'Interface par Navire Annexe



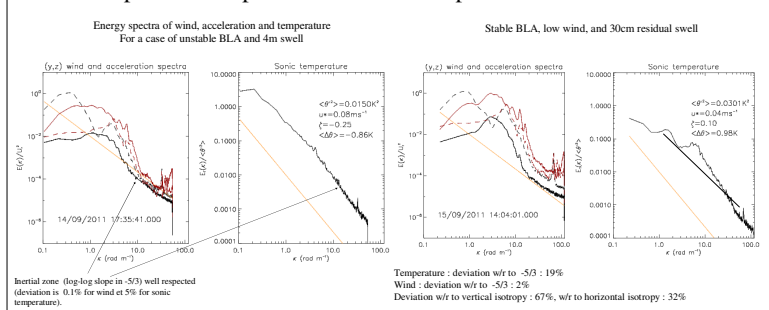
Wind comparison



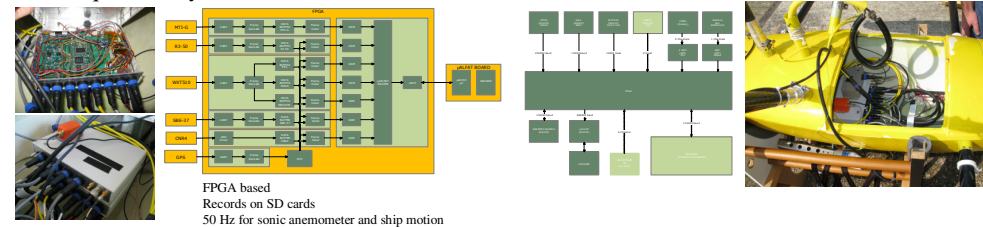
Radiation fluxes comparison



Power spectra examples for wind and temperature



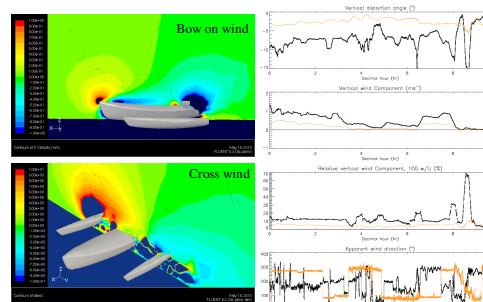
Data acquisition system



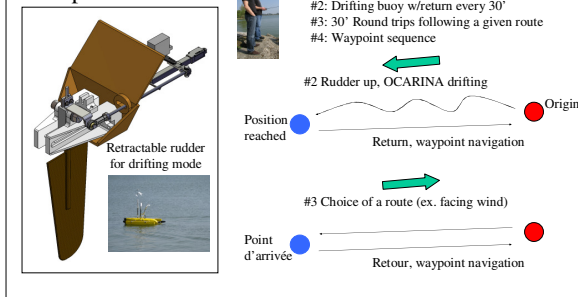
Host vessel : Côtes de la Manche, 26m long



Air distortion simulation, and analysis



Autopilot modes



Why a new platform?

- Issues related to FLOW DISTORTION (AIR and/or WATER)
 - Large ships (vertical angle distortion, far from interface +7m-3m)
 - Displacement height
 - Fixed platforms : distortion depends on azimuth wind angle
 - No profile data (similarity functions ?)
- Transport/parking/deployment/number of people for operation
 - No operation on overboard
 - Instrumentation too big to board on every campaign
 - Cosily deployments not adequate with small experiments
- Not autonomous
 - no spatial investigation of sampled domain (2D structures, matching w/satellite pixels)
 - or uncontrolled drifting of platform

Buoys are rather difficult to deploy, to recover, and they require a large space for storage

Research Vessels have air distortion issues, like l'Atalante (85m) from Ifremer



Water displaced around INSU R/V Le Côtes de la Manche (26 m) @ 10 kt



Did you say « Sea Surface Temperature » ?

Were successfully tested:
-measurements close to the surface
-Small aerodynamic distortion effects
-New point of view w/r to classical platforms
-possibility to estimate met/turb/wave/SST on one platform
-deployed in 4m swell / 10 kt winds near shore

Still challenging :
-humidity fluctuations
-long missions (>=1 day)

Turbulent Flux Comparison

