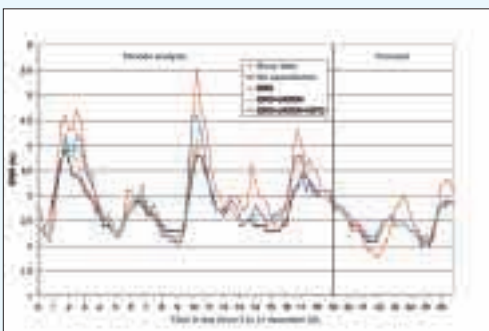
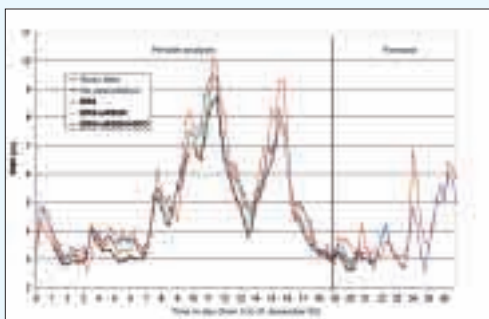




Operational use of Jason-1 data

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Figures 1 and 2: time series of wave heights derived from simulations generated by a wave model without assimilation (black), and with assimilation of data from a single satellite (ERS-2, red); two satellites (ERS-2 and Jason-1 green); three satellites (ERS-2, Jason-1 and GFO, blue); and with buoy data. Buoy n° 51001 is near the Hawaiian Islands, and buoy n° 46059 near the Californian coast.

Satellites are the best tool for acquiring global measurements. The French national weather service Météo France is closely involved in satellite altimetry as well as being one of its main operational clients. It produces daily sea-state forecasts using numerical models assimilating real-time altimetry data. These forecasts are sent immediately to sailors as part of the service's mission to ensure their safety, or to support specific operations.

Jason-1, the follow-on to Topex/Poseidon, supplies measurements of wave height and wind speed every 7 km along its ground track. As it did for Topex/Poseidon, Météo France's marine and oceanography division helped to calibrate and validate wind/wave data from Jason-1 with a view to their operational exploitation, using data from moored meteorology buoys and operational atmospheric models. Moreover, at the request

of the French space agency CNES, since July 2003 Météo France has been putting Jason-1 wind/wave data onto the Global Telecommunication System (GTS), where they are available in real time to the international meteorology community. Adaptations have been made to assimilate data from different satellites and the system is undergoing trials prior to its forthcoming entry into operational service. Studies undertaken with support from CNES [Lefèvre et al. 2003, Skandrani et al. 2003] have shown that using one, two, and then three satellites significantly improved the quality of analysis and short-range wave forecasts (out to two days). Altimetry data from Europe's Envisat satellite, launched on March 1, 2002 from the Kourou spaceport in French Guiana, will soon complement these data to provide better ocean coverage and enable further advances in marine meteorology.

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