Geophysical Research Abstracts
Vol. 14, EGU2012-8373, 2012
EGU General Assembly 2012

Assessing three generations of GOCE data through its induced surface geostrophic currents

J.M. Sánchez Reales (1), O.B. Andersen (2), and M.I. Vigo (1)

(1) University of Alicante, EPS, Matemática Aplicada, Spain (jms.reales@ua.es, +34 96 590 9707), (2) Danish National Space Center, Department of Geodesy, Copenhagen, Denmark.

Nowaday, with three generations (a total of eight models) of data provided by GOCE already available, it seems to be a good time to evaluate it capabilities in determining the geostrophic flow. For that we centre our attention on the North-Western Pacific Ocean where the strong gravity signal of the area together with the confluence of three major currents make of the zone a representative frame for the purpose. Here we use an anisotropic filter, the Edge Enhancing Diffusion filter, to smooth the noise of the mean dynamic topography previous to the geostrophic horizontal velocities are determined. Comparing with drifters velocities we prove the significantly advance in determining the geostrophic circulation allowed by GOCE. Results are also compared with previous solutions provided by several authors (Maximenco's, Rio 2009, and Chamber's MDTs). GOCE-induced currents are shown to be as close to buoys measurement as those from Maximenco and Rio (both containing in-situ observation information!), and closer than those by Chamber (purely geodetic).