Geophysical Research Abstracts
Vol. 12, EGU2010-12134-2, 2010
EGU General Assembly 2010

On the estimation of tidal and subinertial alongshore water transport from onshore telluric field measurements

Martinho Marta-Almeida (1), Fernando Santos (2), Jesus Dubert (1), Rita Nolasco (1), Ivo Bernardo (2), Antonio Soares (2), Alvaro Peliz (3), and Joao Dias (1)

(1) CESAM, Universidade de Aveiro, Portugal, (2) Instituto de Geofísica, Universidade de Lisboa, Portugal, (3) Instituto de Oceanografia, Universidade de Lisboa, Portugal

Onshore measurements of telluric field oscillations have been used to estimate the water transport associated to tidal flow in the western Portuguese coast. The onshore E-W dipoles located at São Jacinto and Sines were calibrated by comparing the ocean modelled N-S shelf water transport originated by the main lunar tidal frequency and the corresponding onshore motionally tidal electric field. Calibration factors of 3.00×10^4 and 4.25×10^3 m^3 s^{-1} for each mV km^{-1}, with motionally induced origin, were estimated for São Jacinto and Sines, respectively. The results showed that it is possible to estimate the water transport from onshore measurements. The possibility of estimate subinertial alongshelf flow was also assessed, concluding that due to the lack of periodicities controlling that flow is not possible to establish a relationship between alongshelf transports and measured electric potential difference.