EDDY COVARIANCE FLUX MEASUREMENTS AT ALQUEVA RESERVOIR

Potes Miguel
Instituto Ciências da Terra (ICT)

The inland water bodies play an important role in the carbon cycle because can uptake large amounts of carbon dioxide from the atmosphere as well as can release carbon dioxide and methane to the atmosphere. As lakes cover an area of 4.2 million km2, representing an area of more than 3% of Earth continental surface, an increasing concern in estimation of greenhouse gases exchanges between inland water bodies and the atmosphere has been developed in the last years. The eddy covariance (EC) method is the worldwide most common technique used to assess turbulent fluxes over all types of surface. Last year, in the framework of the ALEX project (FCT: EXPL/GEO-MET/1422/2013, www.alex2014.cge.uevora.pt), EC measurements of CO2, as well as vapour, energy and momentum fluxes over water were carried out. During four uninterrupted months such measurements were carried out aloft a floating platform in the Alqueva reservoir. Such field campaign gave continuity to previous studies and it was a step forward the knowledge of carbon exchange between air and lake. The radiative balance, both in short and long wave, is assessed with an albedometer and a pirradiometer. Water temperature profile is also continuously recorded. Thus, with detailed information of the Lake-Atmosphere interactions, it is possible to determine the energy and mass balance of the lake.