

HYDROLARE/ HYDROWEB: A LAKE DATABASE TO MONITOR IN THE NEAR REAL TIME WATER LEVEL AND STORAGE VARIATIONS FROM REMOTE SENSING DATA

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ABSTRACT

An accurate and continuous monitoring of lakes and inland seas is available since 1993 thanks to the satellite altimetry missions (Topex-Poseidon, GFO, ERS-2, Jason-1, Jason-2 and Envisat). Global data processing of these satellites provides temporal and spatial time series of lakes surface height with a decimetre precision on the whole Earth. The response of water level to regional hydrology is particularly marked for lakes and inland seas in semi-arid regions. A lake data centre is under development at by LEGOS (Laboratoire d'Etude en Géophysique et Océanographie Spatiale) in Toulouse, in coordination with the HYDROLARE project (Headed by SHI: State Hydrological Institute of the Russian Academy of Science). It already provides level variations for about 150 lakes and reservoirs, freely available on the web site, and surface-volume variations of about 50 big lakes are also calculated through a combination of various satellite images (Modis, Asar, Landsat, Cbers) and radar altimetry. The final objective is to achieve in 2012 a fully operating data centre based on remote sensing technique and controlled by the in situ infrastructure for the Global Terrestrial Network for Lakes (GTN-L) under the supervision of WMO (World Meteorological Organization) and GCOS (Global Climate Observing System).