1. Introduction

A USDA/NASA funded program is performing near-real-time altimetric monitoring of the largest lakes and reservoirs around the world. The near-real-time stage measurements are currently derived from incoming data from the NASA/JASON-1/OSTM mission. Archived data from the NASA/CNES Topex/Poseidon and Jason-1 missions, and from the NRL GP mission are also utilized to provide historical time series variations from 1992-2009. This program is currently being expanded and enhanced by including the Esa ERS and ENVISAT data sets which will allow the additional monitoring of ~500 lakes. Radar, lidar and ground-based data sets are all used for validation exercises. The USDA/FAS utilize the products for assessing irrigation potential (and thus crop production estimates), and for general observation of high-water status, short-term drought, long-term climatic trends, and anthropogenic effects. Here, we report on the overall performance and contribution of the Poseidon-3 radar altimeter IGDR data set, in terms of overall product quality and quantity. We also present the first ENVISAT products and demonstrate how the Jason-2/OSTM and ICESat-1 data sets are being used as relative validation sources.

2. NRT from Jason-2/OSTM

Acquiring targets ~150km² to ~900km² within a 0-1.2 sec of the coastlines, and with resulting time series accuracies ±3.31m rms.

3. New ENVISAT products and their validation

(Above) Preliminary ENVISAT products (Ex1) for Lake Victoria, 2002-2010 (by cycle). Such products will be available for ~500 lakes at 35-day resolution, while OSTM products are available for ~100 lakes at 30-day resolution (Right).

4. Benchmarking + End Users

NRT Splinter Session
2011 Jason-2/OSTM meeting
San Diego, USA