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SARAL/AltiKa versus Cryosat-2 SAR and ENVISAT for inland water retrieval

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The availability of the new cooperative altimetry technology mission of Indian Space Research Organisation (ISRO) and CNES (Space Agency of France) called SARAL/AltiKa provides new altimetric observations for bothe the blobal ocean but also for inland waters.

In this presentation we have performed an initial evaluated of the SARAL/ALtiKA observations over a number of large lakes and rivers throughout the world and compared these with both ENVISAT altimetry over the 2002-2012 period along the identical ground-tracks.
We can compare selected water bodies with contemporary Cryosat-2 data even though the satellite operates over a fundamentally different ground track pattern. However the data from Cryosat-2 SAR and are of highly accurate as the first investigations have demonstrated (Villadsen et al., 2014).
Among the set of global water bodies we have selected medium sized lakes like the Swedish lakes (Vanern and Vättern) for the intercomparison as they contain both SARAL and Cryosat-2 SAR altimetry. To test the capabilities for retrieving lake levels in smaller lake that we have included the Arresø in Denmark. With its less than 15 sq miles and observations from both Cryosat-2, Envisat and SARAL/AltiKA it pushes the limit for altimetry but demonstrate the amazing capability of the new Ka band radar for retrieving lake levels.