



## **Evaluation of the Sentinel-3 Hydrologic Altimetry Processor prototypeE (SHAPE) methods.**

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Inland water scenes are highly variable, both in space and time, which leads to a much broader range of radar signatures than ocean surfaces. This applies to both LRM and “SAR” mode (SARM) altimetry. Nevertheless, the enhanced along-track resolution of SARM altimeters should help improve the accuracy and precision of inland water height measurements from the satellite. The SHAPE project – Sentinel-3 Hydrologic Altimetry Processor prototypeE – which is funded by ESA through the Scientific Exploitation of Operational Missions Programme Element (contract number 4000115205/15/I-BG) aims at preparing for the exploitation of Sentinel-3 data over the inland water domain.

The SHAPE Processor implements all of the steps necessary to derive rivers and lakes water levels and discharge from Delay-Doppler Altimetry and perform their validation against in situ data. The processor uses FBR CryoSat-2 and L1A Sentinel-3A data as input and also various ancillary data (proc. param., water masks, L2 corrections, etc.), to produce surface water levels. At a later stage, water level data are assimilated into hydrological models to derive river discharge.

This poster presents the improvements obtained with the new methods and algorithms over the regions of interest (Amazon and Danube rivers, Vanern and Titicaca lakes).