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Satellite altimetry over large hydrological basins

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The use of satellite altimetry for hydrological applications, either it is basin management or hydrological modeling really started with the 21st century. Before, during two decades, the efforts were concentrated on the data processing until a precision of a few decimeters could be achieved. Today, several web sites distribute hundreds of series spread over hundeds of rivers runing in the major basins of the world. Among these, the Amazon basin has been the most widely studied. Satellite altimetry is now routinely used in this transboundary basin to predict discharges ranging over 4 orders of magnitude. In a few years, satellite altimetry should evolve dramatically. This year, we should see the launchs of Jason-3 and that of Sentinel-3A operating in SAR mode. With SAR, the accuracy and resolution of a growing number of measurements should be improved. In 2020, SWOT will provide a full coverage that will join in a unique framework all the previous and forthcoming missions. These technical and thematical evolutions will be illustrated by examples taken in the Amazon and Congo basin.