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The WatER Mission in Europe: how can it help science?

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The Water Elevation Recovery (WatER) mission, which was recently submitted by an international team to the Earth Explorer Core Mission of ESA, is dedicated to the determination of surface water extent, height, and slope. The WatER instrument consists of a Ka band Radar Interferometer (KaRIN) coupled with a nadir Ka altimeter (AltiKa) for filling the nadir gap and for risk reduction in the KaRIN calibration. There is a strong need to determine the value added science that can be attained from various spatial and temporal samplings of surface water storage and movement. A Virtual Mission has been implemented for a while and helps to answer this question. Recent large floods that occurred in 1995 on the river Meuse in Northern Western Europe have led to heightened interest in flood forecasting systems in this region. The VM concept has been applied to this river. Simulated WatER data are brought to a global forecasting model involving meteorological, landuse and DEM data. The validity of the forecasts and their improvement are then examined in specific cases.

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