

Satellite inspired hydrology in an uncertain future: a H SAF and HEPEX workshop



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Type: **Poster presentation**

Total runoff estimation through the exploitation of multiple satellite data: STREAM project

STREAM -SaTellite based Runoff Evaluation And Mapping, is an ESA project investigating the feasibility to derive runoff estimates from existing spaceborne missions. The purpose of the project is to develop and validate a solid “observational” approach alternative to existing model-based runoff estimates, that exploits space-only observations of Precipitation (P), Soil Moisture (SM) and Terrestrial Water Storage Anomalies (TWSA) for deriving Total Runoff. The first two variables will provide the event flow, i.e., the fast component of total runoff highly responsive to precipitation variability, while TWSA will be used for obtaining its complementary part, the baseflow, i.e., the return flow from groundwater. The underlying assumptions behind STREAM are the knowledge of the key mechanisms and processes that act in the formation of runoff, such as the role of the soil moisture in determining the response of the catchment to the precipitation inputs, which have been soundly demonstrated in more than ten years of studies, extensively published in the literature.

The quality assessment of STREAM total runoff estimates will be pursued for the period 2003-2018 at 5 pilot basins across the world (Mississippi, Amazon, Niger, Danube and Murray Darling + multiple sub-basins) characterized by different physiographic/climatic features.

Which session would you like to present in?

1. Remote sensing, hydrological modelling and data assimilation

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