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Comparison and fusion of satellite rainfall products for hydrological modeling over Eastern Canada watersheds

Precipitation is generally considered to be one of the least certain input of a hydrological model. This uncertainty stems in part from its spatial variability within a watershed, which is difficult to represent with a network of rain gauges, especially when it is not very dense. Remote sensing can provide a more complete spatial picture, but its performance as an input to modeling natural streamflow remains poorly validated. This is particularly the case for near real-time products, which is of great interest to water resource managers. This study compares the performance of different precipitation products, including CMORPH, CHIRPS, PERSIANN and TMPA, against weather stations and various reanalysis products when these data are used as inputs to the HSAMI hydrological model. These individual products are also compared to different data fusion approaches and evaluated against observed streamflow using metrics such as the Kling-Gupta efficiency and mean annual bias. The watersheds studied are located in Quebec and Ontario.

Which session would you like to present in?

1. Remote sensing, hydrological modelling and data assimilation

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