

## Continuous modelling for design simulation in small and ungauged basins

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The benefit of continuous modelling in hydrological studies is widely recognized, indeed it is particularly promising for estimating the design hydrological input for a variety of practical applications. Its added value is to provide a large sample of synthetic scenarios, effective input for risk and hazard statistical analyses, and to better reproduce the design flood volumes. As a consequence, there is a clear tendency to overcome the concept of design hydrograph in favor of the design runoff simulation. Recently, it was underlined the possibility and the opportunity to apply the continuous framework also in the challenging case of small and ungauged basins. Using a simple rainfall-runoff model structure, necessarily calibration-free, it is possible to significantly improve the common techniques applied in such crucial watersheds (i.e., the rational method). In this contribution, we focus on a continuous rainfall-runoff model, named COSMO4SUB, particularly designed for small and ungauged basins. Other to underline and to confirm the benefit of such approach we investigate on all modelling steps verifying possible parsimonious solutions for improving data scarce hydrological risk applications.