



## **Conditional simulation of distributed rainfall**

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There is a great need for spatio-temporal modelling of precipitation as input data to hydrological models. The development and increasingly use of area distributed models and energy balanced equations, requires a more correct calculation of both the amount and distribution of precipitation.

This study demonstrates a method for modeling rainfall using a thresholded transformed latent Gaussian process (the GRF-method). Observed rainfall at the gauging stations is transformed to a latent Gaussian variable by the use of a monotonic function. Stochastic simulation is used to generate realisations of rainfall for each time step, a two step algorithm provides the simulation of areas with no rainfall.

Results from conditional simulation of distributed rainfall by the use of the GRF-method are shown from a region in the south-west of Norway. 74 precipitation gauging stations are used in the simulations, and the GRF method is compared to other interpolation methods.