

CONCEPTUAL RAINFALL-RUNOFF MODELS VERSUS FIELD OBSERVATIONS DURING FLOOD EVENTS ON THE SMALL STRENGBACH GRANITIC CATCHMENT (VOSGES MASSIF, EASTERN FRANCE)

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In order to test the ability of parsimonious conceptual rainfall-runoff (RR) models to reproduce flood discharges on a small (0.8 km²) granitic forested temperate catchment, a hydrological modelling exercise has been undertaken on a set of flood events affecting this catchment. Two rainfall-runoff models have been applied to the data set available on the 1989-1997 period:

- the reservoir-based GR3 RR model developed by Michel (1989);
- the Topmodel RR model based on a distributed topographic index (Beven, 1997) used to simulate hydrological processes, especially the dynamics of surface or subsurface contributing areas.

These two RR models have been tested, at an hourly time step, on simple and composite flood events selected throughout the hydrological year in order to understand the role of the antecedent hydrological conditions on model efficiency and parameters. The evaluation of model performances in calibration is based on efficiency criteria (Nash...) and values of the parameters. Model results are compared to available field observations during flood events (water table depth, extension of water saturated areas) to better understand the gap between fiction and representation of reality.

