

## **Modelling water transport under forest sites - impacts of land use changes on runoff**

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The occurrence of floods with their high economic damages forced the hydrological research to take steps which decrease their impacts. In a current research project the effects of different forestal and hydrological measures on water dynamics are examined and subsequently modelled by the physically based, two dimensional precipitation-runoff-model CATFLOW. Research is focusing on the influence of different wood-types, plant density, road construction and density, soil degradation, and drainage network. The objective is to get an applicable tool to predict runoff as a fact of landuse changes at forests. For that purpose two different forest sites were chosen to yield survey input and calibration data for the simulation model. First results show a dominant influence of soil hydraulic parameters. Thus, the management of the forestry is of major importance for runoff characteristic.. Besides there is a distinct dependence of water dynamics within the ecosystem on field morphology, canopy cover and climate, especially on precipitation. Accordingly, model predictions of runoff based on measured input parameters are possible and will contribute to a sustainable catchment area management and can help to defend floods. Consequently the manner of forestry operation will directly affect runoff quantity. Final results will be shown at the presentation.