



## **Fog deposition as an important contribution to the water budget**

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In some catchments, especially in low mountain ranges, fog deposition can make a considerable contribution to the water budget. Yet, fog deposition is usually not measured, hence gaps between observed and expected discharge in the water balance of these catchments arise. These gaps are ignored, or either corrected by calibration, like by decreasing the evaporation or corrected with general approaches like an additional fog water input depending on the elevation.

We present an approach, which is capable to estimate physically justified the fog deposition in dependence on the vegetation. The method requires only limited data and meteorological standard measurements are used. The calculations are done on a spatial basis and have been performed for Germany.

First, liquid water content (lwc) at ground level is derived and interpolated to grid cells. The temporal resolution of the lwc-product is 1 hour and the spatial resolution 1 kilometre per grid cell. Second, deposition velocities based on measurements are determined for the study area. Last, the fog deposition can be estimated from the lwc-product, the deposition velocity and the actual vegetation properties (i.e. height of vegetation, Leaf Area Index).

Depending on the catchment area, the additional precipitation input due to fog precipitation contributes up to 50 % to the annual precipitation. This is a considerable portion of the overall input and needs to be discussed, in order to avoid misleading effects of water budget model calibration in mountain ranges.