



Has land-cover a really significant hydrological impact at the catchment-scale?

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We investigate here the link between vegetation types and long-term water balance in catchment areas, by using the most common water balance formulas that relate long-term annual streamflow to long-term annual rainfall and long-term potential evapotranspiration estimates.

Our aim is to assess empirically whether or not the type of vegetation cover can be discriminative from a water-balance point of view. To address this issue as objectively as possible, we choose a downward approach allowing hypothesis testing and a worldwide set of 1508 catchments. This dataset is particularly interesting because of its size and its hydroclimatic diversity.

Contrarily to the commonly accepted idea that vegetation is a major determinant of catchment water balance, we find only marginal improvements of the classical water balance formulas when introducing land cover information. We try then to understand the reasons why, at the catchment scale, vegetation seems to so weakly correlated to catchment water balance.