



The eco-hydrological resilience depends on the catchment bedrock and on the hedge density in the riparian zone

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The eco-hydrological variability of river runoff has to be characterised with relevant parameters. An index of monthly runoff distortion, based on the monthly median runoff and the inter-annual median runoff has been proposed by Breil and Malafosse (1994). The index quantifies the bulk range of variation supported by the aquatic ecosystem. It has been applied to 21 rivers from Brittany, lying on schist or granite bedrock. It shows that the variability highly depends on the bedrock, that is a primary factor of the eco-hydrological resilience. Catchments lying on schists have a mean eco-hydrological variability higher than these on granite, and their variability inter-catchment is large.

In parallel, the impact of the vegetation, and specifically the trees of hedges has been studied. The landscape structure in Brittany has had a tremendous evolution since 50 ans: with a decrease of the hedges density (up to 250 000 km on 28 000 km²), and changes in the hedge spatial structures in the riparian zones. A significant trend due to this landscape modification has been modelled for evapotranspiration and runoff.

A research crossing the previous eco-hydrological typology and the hydrological impact of the hedge levelling has been done. The result shows that the presence of hedges in the riparian zone tend to reduce the eco-hydrological variability and therefore to increase the resilience of the river, for the catchments lying on schists. It can be sus-

pected that the reduction is lower for catchment lying on granite.