



## **How does a nonurban hydrological model perform on urbanized catchments?**

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Torn between the complexity of the urbanized environment and the need for generalized impact assessment tools, urban hydrologists have developed different approaches to represent the modified water cycle through various spatiotemporal scales. These approaches can be explicit, hence complex and data demanding, or rather implicit, but riskily non-realistic. Leaning toward simplicity, we aim at developing an efficient modeling tool that permits implicitly to take into account the spatial configuration (urban landscape vs. natural surfaces) and temporal evolution at the scale of an urbanized hydrological catchment. Our choice was to start from a nonurban model structure and conduct multiple modifications so as to reach a holistic structure that works for both urban and rural catchments. To this end, a large sample of 365 French and American catchments was prepared, containing a wide spectrum of hydroclimatic and urbanized situations. Our first step was to analyze the performances of the starting structure with respect to catchment imperviousness and urbanization percentage. This has led to discern the behavior of the model parameters, thus drawing a plan for model structure modifications. Preliminary results indicate good model performances at the hourly time step regardless of urban conditions and somehow different model parameters values considering very urbanized or very rural situations.