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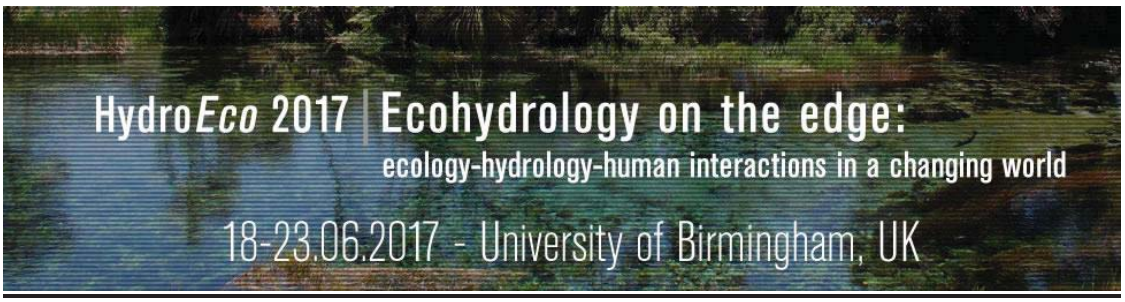

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Can a riparian vegetation model be spatially validated?

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Type of Presentation: ORAL

Abstract
The RVDM (Riparian Vegetation Dynamic Model) is a novel ecohydrological approach that has demonstrated great capabilities for the riparian vegetation prediction in natural semiarid systems (García-Arias and Francés, 2016). This contribution aims to demonstrate the versatility of the model in the prediction of the plant distribution in a different riparian environment, in which the flow regulation modifies the typical seasonality of natural floods and droughts impacts characteristic of semiarid environments. The model has demonstrated to be sensitive to a regulated regime, predicting correctly the dynamic behaviour of different succession phases and lines in the plant community. In terms of correctly classified instances, the modelling accuracy resulted between 0.6 and 0.9. The kappa coefficient of agreement, which estimates the model performance neglecting the agreement randomly achieved, resulted on values between 0.5 and 0.8 in the different temporal case studies analysed. Spatially, the model predicted correctly the transversal distribution of the observed riparian communities. These results are comparable, even better, to those obtained during the model calibration in a natural semiarid river system (García-Arias and Francés, 2016) in which the sensitivity analysis of RVDM revealed the importance of natural floods in the vegetation dynamics simulation. Therefore, the main conclusion extracted from this research is the spatial robustness of the model, which is capable to predict plant behaviour under different hydrological regimes in a river different to the calibration one.

A conceptual model of groundwater dissolved organic nitrogen based on a machine learning method and sensitivity analysis

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Type of Presentation: ORAL

Abstract
Groundwater nutrient studies have historically focused on the ecological effect of dissolved inorganic nitrogen (DIN) and its management; however, several groundwater investigations have identified dissolved organic nitrogen (DON) as the dominant form of total dissolved nitrogen (TDN) in their study areas. The groundwater DON is readily transported to the surface water system and contributes to the deterioration of surface water quality in sandy areas with shallow groundwater