



Taking profit of statistical modelling by neural networks: how to deal with vigilance levels prediction for flash flooding. Case study on Lez Basin (Southeastern France)

Thomas Darras (1), Anne Johannet (2), and Séverin Pistre (3)

(1) OSGAPI, Nîmes, France, (2) LGEI, IMT Mines Alès, Univ Montpellier, France, (3) HSM (Univ. Montpellier, CNRS, IRD), Montpellier, France

Neural networks are statistical models that can identify any differentiable function provided a significant database having the useful information. They were applied to the field of hydrology from the nineties. In hydrology, and specifically in karst discharge modelling, training and generalization of models are penalized by the presence of huge noises and uncertainties in databases. Thereby huge research efforts have been devoted to the best way to manage efficiently the complexity of the model in regard with the generalization capability (Kong A Siou et al., 2012, 2014; Artigue et al., 2012; Taver et al. 2014; Darras et al., 2015).

In this context, the proposed work aims to present the application of neural modelling to the prediction of vigilance levels of the river Lez at the entrance of Montpellier (Lavalette station) by two ways: threshold applied to predicted discharges, and direct learning of the relation rain-vigilance levels.

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