



Dynamics of suspended sediment in surface water of an agricultural watershed by modelling approach, the Save, Southwest France.

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The comprehension of surface water contaminant dynamics (pesticides, metals) is of great importance in order to better improve water quality management. In this context, the quantification of Suspended Sediment (SS) dynamics in surface water at the watershed scale is the first study step as SS corresponds to the carrier phase for some contaminants. The objective of this paper is to quantify suspended sediment at watershed scale, and to identify transport process through temporal landscape variations by modelling approach, using the agro-hydrological model SWAT 2005, adapted from small to large watershed. The study site is a dominant agricultural watershed of 1100 km² (the Save, tributary of the Garonne) located in southwest France. The model is calibrated then validated based on 14-year historical record (1994–2008) for flow parameters and on 4 years (1994-96 and 2007-08) for SS. The river discharge estimated from the model is compared with observed flow using statistical parameters so as to evaluate the performances of the recent hydrologic simulations. A discussion on the results of model calibration, parameterization and optimum model parameters is presented. Then the evaluation of SS by comparing data measurements and data simulated will be discussed in order to improve the dynamic of SS at the watershed scale.