Geophysical Research Abstracts, Vol. 10, EGU2008-A-08597, 2008 SRef-ID: 1607-7962/gra/EGU2008-A-08597 EGU General Assembly 2008 © Author(s) 2008



Rebuidling point data to model the nutriment dynamics of an intermittent river

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Coastal intermittent rivers have a specific hydrological behaviour resulting in long draught periods interrupted by floods of high intensity and short duration which also influence the water quality dynamics of downstream water bodies. To improve their management and predict the impact of future changes on water availability and quality, coupled hydrologic and water quality models are used. However, the point data requested to run these models, is often not available, even on small experimental catchments. Indeed, according to the current EC regulation, nitrogen and phosphorous monitoring are not mandatory for sewage treatment works (STWs) that receive less than 120 kg of organic waste per day. Hence, to model these catchments, one has often to rebuild the requested data using annex measurements or observations. In this work, the well known Soil and Water Assessment Tool (SWAT) is used to simulate daily flow and nutrient fluxes on the Vène River located in southern France. The river receives the output of five point sources (three STWs and two karstic springs) of which only two are monitored at regular time steps. A parameterisation scheme combining a characterisation of flood events and water conductivity measurements was used to rebuild the missing data. The model outputs were analysed at three locations and the relative importance of the missing data was assessed taking into account the prevailing hydrological processes.