

The logo for FOSS4G 2006, featuring a stylized red and white graphic that resembles a ribbon or a stylized letter 'G'.

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Spatial data infrastucture for watershed modelling and making decision

Societies alter their territory to adapt it to their needs, thus interfering physical process. In Brittany, within bocage landscape the question comes out among others in terms of runoffs insidious vehicle for agricultural inputs of cultivated plot of land towards rivers and as a consequence for the damage of water quality. In order to reduce the runoff transfers, the organisations in charge of catchment basin have settled landscape or hydraulic devices. Nevertheless, if on the one hand according to the plot scale, the efficiency of a talus on the streaming is easily conceivable, on the other hand, according to a catchment basin scale, it seems hard to measure the impact of these devices without the proper tools. At this scale, phenomena are discontinuous in space and time. To evaluate the impact of this, a prototype model has been developed at the RESO laboratory in cooperation to Jaudy-Guindy-Bizien watershed office (Bretagne, France). This model, named TAnaTo, propose a new approach to integrate constraint in water pathway based on a Triangular Irregular Network (TIN). First, from TIN, a network graph is produced. It represents topographic and anthropic flow directions. Then, the drainage network enables to calculate spatial and statistical indicators. Results are exploited by the country planner Jaudy-Guindy-Bizien to evaluate impact on landscape transformation and to measure the effectiveness of its territorials actions. The purpose here is to present the model that was entirely developped with open source technology (OpenJUMP, GTS, PostGIS) and a case of study in operationnal works.

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