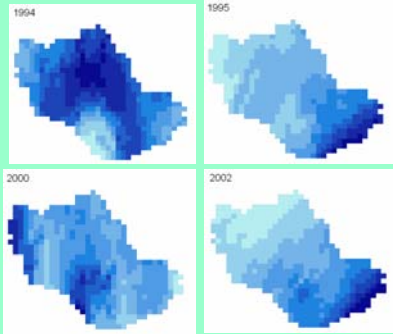
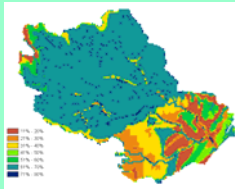


Data & Preprocessing

Météo France radar rainfalls



Soil Moisture

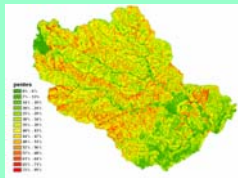


Maximum infiltration heights (BRGM) and soil composition



Infiltration and subsurface flows

DEM



Slopes

Landuse

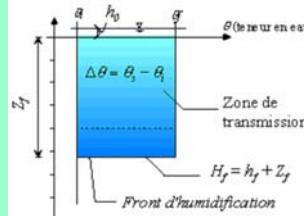


Roughness

Modelling

Infiltration Green & Hampt

$$\frac{\partial z_f}{\partial t} = K_s \left(1 + \frac{(\theta - \theta_i) S_f}{z_f} \right)$$



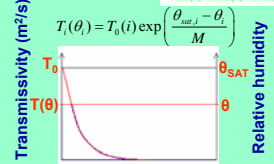
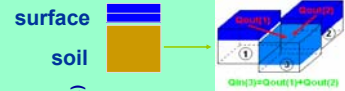
Watershed runoff Kinematic wave

$$\frac{\partial h}{\partial t} + \frac{\sqrt{S}}{n} \frac{5}{3} h^{2/3} \frac{\partial h}{\partial x} = P - I$$



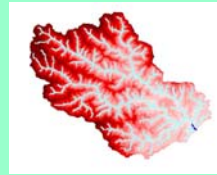
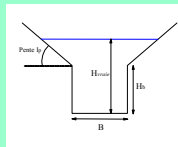
Subsurface transfer Darcy's law

$$Q_{out} = T_s(\theta) \text{ grad}(h) dx$$



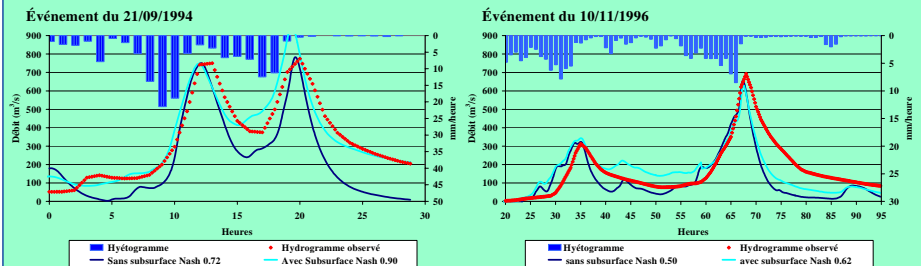
Drainage network Kinematic wave

$$u = \frac{1}{n} \sqrt{S} R^{2/3}$$



Results

Outlet hydrographs



Sensitivity tests Parameter fitting using GLUE method

