

## **HYDROINFORMATIC AND WATER RESOURCES MANAGEMENT**

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### **ABSTRACT:**

The last decades have taken a remarkable emergence of numerical tools dedicated to the calculations and to the mapping in the domain of hydrodynamics. This happened thanks to the computer technologies, in particular to the evolution of the programming languages and fast increment of processing speed.

The application of these tools in the domain of hydrodynamics, in particular for the natural surface water flow and groundwater flow, brought solutions to the problems linked to the management of these resources

These tools help particularly the decision-makers to analyze and to organize the important mass of Data concerning the water resource project, then in a second step, these tools quantify by modelling the concerned phenomenon (flow of surface water or groundwater) which allows the identification of the hydrodynamic parameters that govern the phenomenon. In another important step, these numerical tools allow predicting the evolution of the reserves facing current and/or future requests, as well as to realize simulations of extreme phenomena such as the floods and the droughts that are more and more frequent owing to the known climatic changes

In this work, we present a panoply of hydroinformatic tools, focusing on the capability to establish a Decision Support Systems (DSS) in the domain of the management and planning of the water resources.

**KEY WORDS:** Hydroinformatic tools – Water Resources Management – Decision Support System