A decision support tool for flash flood control in large dams

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Large dams equipped with fully operational spillway gates allow a variety of strategies during flood control situations.

When the reservoir volume is not enough to absorb extraordinary inflow volumes, the flow peak attenuation process is strongly affected by the operational criteria followed during the event.

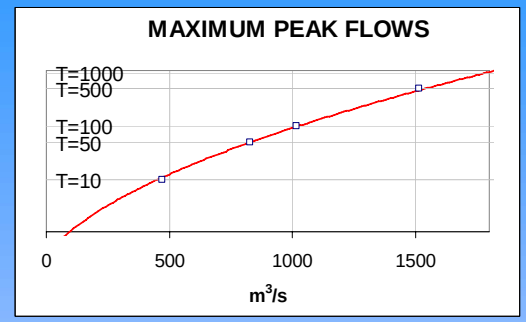
PCTR is a computer application incorporating real time hydrological and hydraulic information helping to improve actions to be taken during the occurrence of a flood. Processes REAL TIME DATA, providing clear graphs of the present state of the system, past inflows to the reservoir, reservoir level, past and future discharges depending on possible gate operations and future inflows, after a **hydrological real-time prediction model** based on artificial neural networks scheme.

APPLICATION:

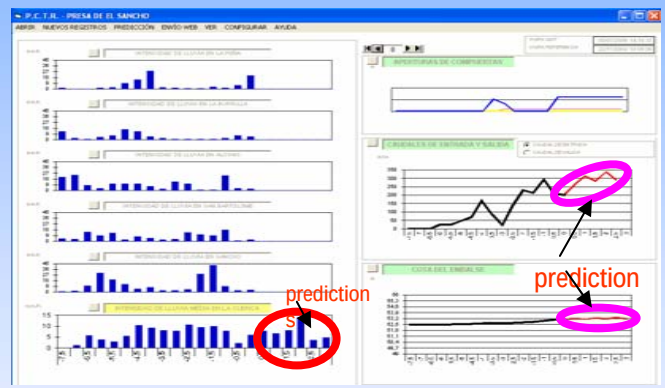
Large dam located in the SW of Spain

3 radial gates - Maximum discharge = 1400 m3/s

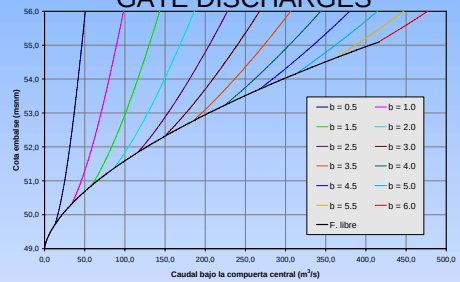
Reservoir capacity = 59 million m³.



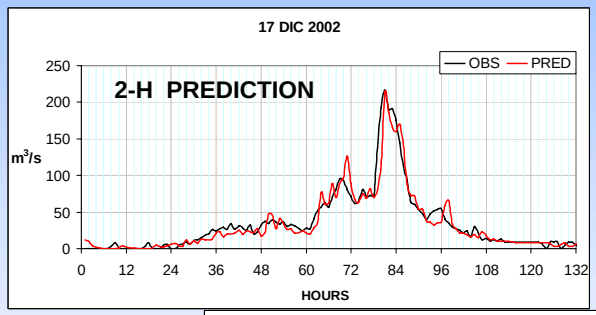
PCTR – main window

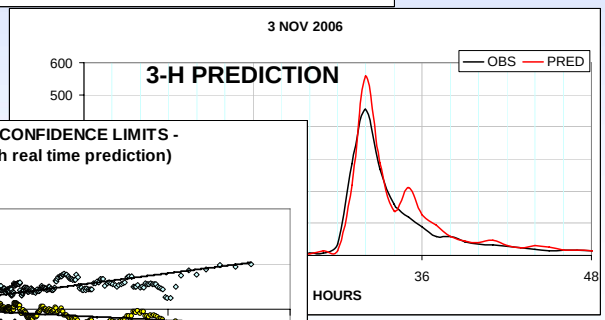


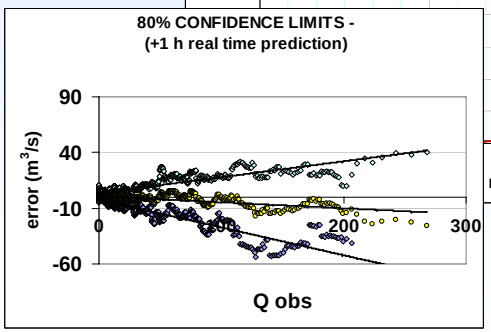
GATE DISCHARGES



ANN- INFLOW FORECASTS







CONTROL CENTER at the DAM