



Relation between D.E.M and seldom parameters in two sub river basin of the Ebro basin by multifractal model

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In the hydrographic basin of Ebro river, high fluctuations through time are found in water quality parameters being one of the highest concerns in the area. These differences depend to a great extent on the rain regimen, soil chemical composition and proportion of groundwater. In the present work the relation that exists between the characterization of the river basin relief with regard to the variability of the water chemical and physical parameters time series are studied through multifractal parameters.

The study is focus on two well differentiated sub-basins. One of them, Aragón river is located next to the Pyrenees, with low level on salt concentration and highly irregular. Its flow level is relatively high respect to the area. The other one, Jalón-Jiloca subbasin is characterized by high values of salt concentration, very irregular flow and a lot of variability for most of the water components and long time periods with scarcity of rains. Precipitations are recorded at weather stations on monthly bases, whereas the river sampling carried out to analyze water parameters are recorded each six months. The parameters normally analyzed in the water river-bed are: flow, pH, SAR, electric conductivity, DBO₅, NO₃⁻, PO₄³⁻. Both types of series include 25 years.

Respect to river basin relief it is characterized through the threshold area for river network generation and the digital elevation model (DEM). The threshold area is defined as the minimum drainage area required to initiate the river and the DEM of the two sub-basins were obtained at a 0.5km × 0.5 km resolution.