



Determination of homogeneous regions for flood regional analysis in Lazio region

M. Rianna, F. Napolitano, and F. Lombardo

D.I.T.S., "Sapienza" University, Rome, Italy, (Maura.Rianna@uniroma1.it)

The delineation of homogeneous regions in a geographical area is an important step for the regional frequency analysis based on the index flood method. To this end, the objective of this study is to identify groups of hydrologic similar basins in the Lazio region, in Italy.

In the context of region of influence technique an analysis based on seasonality measures as catchment similarity indexes is used to find regions. The indicators used for helps to identify basins with the same flood production mechanism are the Burn's vector and the Pardè index. The former describes the seasonality on the extremes events, the latter estimates the seasonality on monthly variables.

Then an homogeneity test proposed by Hosking and Wallis based on L-moments ratio and an Anderson-Darling rank test with a non parametric bootstrap approach are used to test if could be assumed that data observed at the different sites in a homogeneous region arise from a common regional distribution.

At the end a comparison and a comment of results obtained with the different techniques is given.