

Contribution to multivariate analysis of sediment transport variable: case of the catchment basin of Mina wadi (Wilaya of Relizane)

This study presents the analysis of sediment transport variable in the catchment basin of Mina wadi.

The work comprises (03) distinct parts, namely:

- Quantification of specific erosion in the hydrometric stations located in the basin, from the stochastic approach;
- Determination of factors that limit and promote erosion on the basis of a principal component analysis;
- Determining the productive areas of sediment in the catchment basin, using the mapping as support.

We noticed that specific erosion calculated per station over a twenty two- year (22) period, has a remarkable variation in terms of both intra-annual and annual values . Those variations are caused by biophysiological and climatological characteristics of the catchment basin.

The use of statistical techniques (PCA and multiple regression) enabled to explain the basin's behavior towards specific erosion by selecting morphometric and biological parameters which are: surface area, drainage density, slope, rain, runoff coefficient and vegetation cover.

The cartographic approach has identified two areas in the catchment basin of Mina wadi. An area in the northern part of the basin, characterized by a significant erosion in excess of 20 t /hectare / year, and an area in the south, less eroded.