



Is rainfall erosivity increasing in Mediterranean Iberian Peninsula?

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Erosion and desertification risk are one of the main environmental problems in Mediterranean Iberian Peninsula. Moreover, related to climate change is predicted to increase desertification risk due to increase aridity linked to increasing temperatures.

Changes in precipitation are also expected in Mediterranean areas but uncertainly in predictions are still high. In this sense, dense precipitation databases are required to explore observed changes in precipitation amounts, concentration and variability to better understands dynamic of main climatological factors of erosion.

In this study we used the recently developed MOPREDA_{MES} dataset that includes 1113 complete and homogeneous monthly rainfall series of the Mediterranean Iberian Peninsula (IP) for the period 1951-2000. Thus, we calculate and analyze for trends two well known erosivity indices: Total Annual Rainfall, Precipitation Concentration Index (PCI) and Fourier Index (F).

Our results show that decreases in annual rainfall but increases in precipitation concentration predominate on Mediterranean eastern Iberian Peninsula during the period 1951-2000. However, spatial variability of these trends is high and, as a consequence, changes in rainfall erosivity exhibit a complex spatial pattern. Decreases in rainfall erosivity are detected under semiarid conditions (Central Ebro basin and South East IP) while increases are mainly detected in dry and subhumid areas.

We present a detailed spatial description of previous results and discuss their implication for erosion and desertification risk on different regions of study area.