Geophysical Research Abstracts, Vol. 9, 11233, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-11233

Precipitation and runoff that causing the largest daily erosion events. An introductory analysis using the USLE data base

J.C. González-Hidalgo (1), M. de Luis (1), R.J. Batalla (2), A. Cerdà (3)

(1) (1) Department of Geography, University of Zaragoza, 50009, Spain (2) Department of Environment and Soil Sciences, University of Lleida, 25198 Spain (3) Department of Geography, University of Valencia, Spain.

We have analysed the precipitation and runoff that produce the largest daily erosion events using the USLE data base located at Purdue University web site. The analysis demonstrated high variability between plots and sited, related with length of records and between sites-intersites variability, but the percentage of precipitation that produce the largest erosion daily events is very low. The same is true with runoff.

The three most daily erosive events produce in mean 40% of total erosion and they are related only to 5% of total precipitation and 16% of runoff. The 5th largest erosion events produce in mean 51% of total erosion and they are produced only by 8% of total precipitation and 23% of runoff. Finally, 10th largest daily erosion events produce more than 60% of total erosion while the precipitation and runoff related with them are 14% and 36% respectively.

The results suggest that, although high variability detected, the most part of precipitation and to a lesser extent runoff, are not relevant to erosion processes by rainfall. Also maximum precipitation and runoff events are not related directly with major daily erosion events.