The geomorphological rainfall in the Mediterranean landscape modeling

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The kinetic energy derived from the heavy rainfall constitutes one of the main factors of the geomorphological processes in Mediterranean environments, as well as in the landscape and the ecosystem modeling, resulting from its extraordinary spatial and temporal variability.

When the rainfall is analyzed, particularly in Mediterranean climate and in the context of Climate Change, it is not only necessary to consider the total rainfall collected annually, but also it is essential to take into account other variables as intensity, duration, and frequency.

A series of extreme rainfall databases have been analyzed for the last 25 years (1993-2017), with daily, horary and 10-minutes registers. These have been obtained from different weather stations belonging to the Agencia Estatal de Meteorología –AEMET- and the S.A.I.H. Hydrosur Network, spatially distributed in two regions of the province of Malaga. (Guadalhorce and Axarquía). The results show the limited frequency of the events considered as torrential rainfall according to the Agencia Estatal de Meteorología criteria ($\geq$100mm/24h; $\geq$60mm/60') and a high occurrence of shorts heavy downpours ($\geq$10mm/10'), especially in recent years. These downpours have been classified as "geomorphological rainfall", short events capable of activating hydro-soil processes, owing to its high intensity and the vulnerable conditions of the eco-geomorphological system in the study areas.