



The influence of minimum time between rain events (MTE) on the daily rainfall and EI30 erosivity index relation.

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The amount of rain registered between two consecutive dry time intervals can be defined as a downpour or rain event. The length of these dry periods is known as minimum time between events (MTE). This work analyses the influence of the MTE value on the daily rainfall and EI30 erosivity index relationship.

Using a potential equation like , the relation between daily EI30 index and daily precipitation, P, was obtained for Malaga. Hourly rainfall data from 1981 to 2007 were used. Rain events of at least 10 mm were identified four each rainy day and several MTE were used (1, 2, 3, 4, 5 and 6 hours). Due to hourly resolution of the data, the EI60 index was then obtained by multiplying the kinetic energy and the maximum hourly rainfall.

Ten minutes resolution data were also available in Malaga from 1999 to 2002. Using these records the linear correlation between EI30 and EI60 indexes was obtained, allowing the conversion of the EI60 indexes previously obtained.

The results showed that no significant differences appear when varying the MTE value. The R² coefficient had values of 0.7192 when working with a 2 hour MTE and 0.7503 for 6 hour MTE. Thus, it can be concluded that the best relation was obtained for the last MTE, though a slightly dependency between daily rainfall and EI30 index was found.