



## **Relationship between Intensity of erosive processes and orientation of the slope in the Romagna-Marche area (northern Apennine, Italy).**

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Investigation of the relationships between the intensity of erosive processes and orientation of the slope became important in order to understand the morphological evolution of the drainage basin in the Romagna-Marche area (central Italy).

Almost all drainage basins of this area display characteristics such as, the predominant south-easterly shift of river channels and the strong left asymmetries, that have been interpreted as the result of the larger sediment supply from south-facing slopes due to greater erosion on the left sides by SE-oriented rivers.

In previous studies, for some authors the intensity of erosive processes, also because the nature of the outcropping lithologies (mainly mudstones), seems to be strongly related to the orientation of the slopes, and the orientation factor often has thought to play an important role on the landscape evolution of this area.

With the aim to understand if relationships between orientation of the slopes and intensity of erosion may exist, within the main drainage basin of the Marche-Romagna area, the Foglia river, has been carried out an analysis of two parameters that may reveal the intensity of erosion, such as, landslides distribution and energy of relief.

To investigate the intensity of erosive processes in the slopes in relation to their orientation has been built a GIS, to identify within the Foglia basin all the slopes with the same physical characteristics (lithology, land use, slope, climate, and vegetation cover) but different orientation. In these selected slopes has been calculated both the energy of relief and the distribution of landslides, analysing the variations of the values with their different orientation.

The data obtained show clearly both, that there is no direct relationship between intensity of erosive processes and orientation of the slopes, and that the slopes with greater erosion are on the NE facing slopes. This study shows that the role that orientation factor may have had in the landscape evolution of the Romagna-Marche area and in the development of drainage systems, seems to be quite marginal.