

Modelling approach for the rainfall erosivity index in sub-humid urban areas in northern Algeria

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Abstract This work presents an approach for storm water erosivity index modelling in the absence of measurement in an urban area, in a sub-humid climate. In torrential storms, floods, loaded with sediments, obstruct storm water drainage. With the aim of estimating the amount of sediment that can be deposited on a stretch of road, adjacent to the study area, the erosivity index is determined from a count of 744 rain showers recorded over a period of 19 years. The Universal Soil Loss Equation (USLE) of Wischmeier and Smith is applied, where only the index of erosivity is calculated; it is based on the intensity of the rain starting the process of erosion in the basin. Functional relations are required between this factor and the explanatory variables. A power type regression model is reached, making it possible to bring a decision-making aid in absences of measurements. **Key words** statistical models, specific erosion, sub-humid climate, urban hydrology, USLE