



## **Estimating the spatial distribution of hillslope sediment delivery to river channels using information at three different spatial scales in the Cuyaguaje basin, Cuba**

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The spatial nature of soil erosion and sediment delivery as well as the variety of possible soil conservation and sediment control measures, requires an integrated approach to catchment management. To evaluate such management, a spatially distributed soil erosion model is necessary. This work aims at estimating the spatial distribution of hillslope sediment delivery to river channels using information at three different spatial scales.

Based on the local soil map, 20 different soils were selected. The three spatial scales include: (i) soil pans (15x45x10cm) which were exposed to six 30 minutes lab rainfall simulations (2 slopes and 3 rainfall intensities), (ii) field rainfall simulations (2x5m) which were conducted on those 20 soils, (iii) a large set of rainfall-runoff-sediment yield data (more than 20 years) from a hydrometric station operational in the Rio Cuyaguaje.

The Soil Conservation Service Curve Number (SCN-CN) method in conjunction with a modification to Universal Soil Loss Equation (USLE) and a sediment routing algorithm were implemented. Computed sediment yield was found to be in good agreement with the observed values. The results and analysis show that the model has considerable potential in field applications.