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Determination of LS Topographical Factor in the Models RUSLE and RUSLE3D Using GIS SEXTANTE

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The recent launching of the GIS SEXTANTE, outlined the generation of this work, which determines and compares the *LS* factor of the models RUSLE and RUSLE 3D. The advantages that SEXTANTE presents with regard to the habitual ArcGIS®, are fundamentally associated to the calculation of the flow directions, i.e. SEXTANTE allows Multiple Flow Directions (MFD) algorithms use.

The effect of replacing the L factor with the upslope contribution area $A_{sp,}$ reflects better the impact of the concentrated flow. RUSLE3D calculates a higher value of the *LS* factor on streams and therefore, when it is calculated in the traditional way (RUSLE), the problem of an overestimation of the erosive power is solved in the highest areas or at the beginning of the hillslopes.