



Help for the script: susceptibility and validation models for automatic landslide susceptibility analysis, mapping and validation in ArcGIS

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A help support for users of the model (script) for the analysis, mapping and validation of landslide susceptibility by means of the GIS matrix model (copyright code 200799900362531) is here presented. This model was developed in the Environmental Researches Group: Geological Hazards and Terrain Engineering (RNM 121) of the University of Granada (Spain) and communicated to the 2007's EGU General Assembly (Geophysical Research Abstract, volume 9, 04317). The model is an application of ArcGIS, by means of its tool ModelBuilderTM, to landslide susceptibility mapping which is available for free download as an ArcGIS tool to be used by public or private entities with interest in land-use planning and managing.

The common use of GIS procedures in ArcGIS, and the particular computing process for the GIS matrix method and the degree of adjustment assessment for landslide analysis, mapping and validation, and the need of its final transposition into ArcGIS, is possible only by using given formats and also a common language along the model programming. For such purpose, this development helps the user through a set of successive modelling windows by means of a graphical, useful and friendly support which is available from the link as model documentation.

To run the model it is necessary to paste the folder "susc_model", available in http://www.ugr.es/local/ren03366/susc_model.rar, in "C:/" and then loads it from Arc-Toolbox in ArcGIS. The new generated files will be saved in "C:\susc_model". To change the path to save the new generated files the general settings should be modi-

fied from ArcGIS; otherwise an error prompt would be generated. Only a raster and continuous format is acceptable for digital elevation model (DEM). It is very important reclassifying landslide inventories (both, the inventory used in landslide analysis and in the other one for the final validation) into two classes with the following numbers: presence of landslide ruptures (value = “2”) and absence of landslide ruptures (value = “1”), in any other case an error prompt would be obtained. Also it is necessary the reclassification of the lithology units into classes of natural numbers (1, 2, 3, . . . , n.).

To run “validation_model”, only maps with format “suscep_matrix” obtained from the susceptibility analysis model “susceptibility_model” are accepted. Finally, also for the validation model, it is necessary to execute the model from the edition window. Once the model is executed, it could be necessary to validate the new model and run the last tool “calculate field (5)”. This is because the names in columns of the “adjust.dbf” table are not added by this tool until this table is generated.

Key words: Help, Automatic geoprocessing, ModelBuilder, GIS landslide susceptibility mapping.