

Line slope calculation *Script* - Version 4f

Line slope calculation

This script is intended to calculate slopes of line layers, representing road networks, based on a Digital Terrain Model (DTM) in the form of a one band raster (or grid), with altitude values. The size of the cells (pixels) should not exceed 50 meters, and a raster of 10 to 25 meters cell size is recommended.

Copy `Line slope v4f.py` and `Line slope v4f.py.help` files to the QGIS 2.18¹ scripts folder, normally:

`C:\Users\[name of your PC]\.qgis2\processing\scripts`

A reboot of QGIS may be necessary.

Call this script at the following menu: Processing -> Toolbox -> Scripts -> User scripts -> Line slope v4f

The script does not change the original line layer, producing a new layer, called "Intersection", the latter being a line layer with all the fields of the original, plus a new field called "Slope", with the values of the slope in percentage (%).

Segment length multiplier input: default value is 5, and this means that the original line layer will be segmented, for slope calculation, in segments with a length of 5 times the DTM pixel size. The minimum value for this input is 3.

Please be aware that the original line layer **MUST** be totally contained inside the DTM bounds (excluding NoData areas). Features of the original line layer outside DTM bounds will not be calculated for slope.

This script was developed to be used for forest roads (gravel or plain soil roads) slope calculation. Avoid using it in main road networks, because these roads have bridges, tunnels, excavations, etc., that are not reflected on the DTM.

¹ Please note: this script does not work with version 3.x of QGIS!