

# The application of the Top Hat function in landscape analysis

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## ABSTRACT

The *Top Hat* (Serra, 1982; Rodriguez et al., 2002) is a mathematical morphology function used in B/W image analysis to extract ridge elements. In geomorphology, it has been applied in order to evaluate in digital elevation models structures of the relief (e.g. Schmidt and Hewitt, 2004). A modifications of the classical Top Hat function in reconnaissance of morphological elements has been developed in Grass-GiS. In this approach the Fuzzy logic is useful to describe the level of each element identified by the *Top Hat function* and related methods. In landscape interpretation, an approach similar to the 2D-dimensional terrain description of Rhue (1968) (*summit, shoulder, backslope, footslope, and toeslope*) has been adopted.

Keywords: Digital elevation models; Landforms and landscape modelling;

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