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## Digital terrain analysis of the Haute-Mentue catchment an scale effect for hydrological modelling with TOPMODEL

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**Abstract.** It is widely recognised that topography plays an important role in the generation of runoff. The scale of a digital elevation model has been found to have some impacts on the results of hydrological modelling in several studies. In particular it has been shown that the representation of the statistical distribution of the topographic index used by TOPMODEL is sensitive to the scale of the digital terrain model. The objectives of this study are to develop an analysis of the topography and scale effects for the Haute-Mentue catchment and to test the role of different spatial resolution on parameter calibration. The major result is that the spatial scale is important for the parameter values, but not determinant for the modelling results if a pertinent methodology is adopted for the determination of digital watershed representation.

**Keywords:** digital elevation model, topographic index, scale problems, TOPMODEL

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