Remote sensing techniques as a tool for development of small scale urban runoff model

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Abstract The research work aims to investigate different remote sensing image processing techniques to extract relevant information for the development of urban runoff models. The techniques employ the use of stereo IKONOS satellite images to extract 3-D topographic features and conduct supervised image classification on the ortho-rectified images generated from the IKONOS satellite. Impervious surfaces and vegetation cover are extracted using the remote sensing techniques. The results reveal that data extracted from remote sensing techniques can be used effectively in modelling runoff for a small urban catchment for estimation of flood extent. However, the water balance modelling over typical climatic conditions requires further refinement in identification of impervious cover.

Key words rainfall–runoff modelling; stereo IKONOS images; sensor orientation; feature extraction; image classification