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Preliminary Assessment of Morphometric and Hydrological Properties of Six Watersheds in the Eastern Part of East Java

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Abstract

A hydrological process on the watersheds is driven by rainfall as the input. Physical properties also affect the magnitude response of the watershed to produce run-off. This paper presents the identification, assessment and visualisation of morphometric and hydrological properties of the watersheds. Six watersheds in the eastern part of East Java were used for the analysis. Physical characteristics obtained by cropping the GIS layer with a watershed. Topographic and morphometric properties of the watersheds derived from the ASTER G-DEM2. Furthermore, hydrological properties are derived statistically by analysing available rainfall and discharge data. Hydrological data (rainfall and discharge) are available from 1996 – 2014. Finally, simple statistical analysis by plotting obtained values are used to interpret the relation between morphometric and hydrological properties of the watersheds. The results show the quantitative number (unit) to describe the morphometric and hydrological properties of the six watersheds that can be used for watershed classification.

Keywords

assessment, hydrological; morphometric; properties; watersheds.

References