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## HYDROLOGICAL MODELING OF THE UPPER CITARUM CATCHMENT, WEST JAVA

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### ABSTRACT

*The assessment of the complex hydrological characteristics in the upper Citarum catchment, West Java, is reported. The effects of population growth and land use changes on the state of water resources and its availability are also included. The validity of rainfall data of the hydrological system has been statistically checked for trends, independency, and mean and variance stability. The classic Thiessen Polygon method has been used in estimating the areal rainfall intensities over the catchment, while storm events with arbitrary return periods have been derived from the frequency analyses. The Pearson III distribution has been selected to simulate the rainfall-surface runoff relationship, to give the most reliable results. The flood analysis software HEC-1 has been employed to carry out the numerical simulations for a recorded flood event in 1994. The Cikapundung sub-catchment has been chosen, as a case study, for calibrating the hydrological simulations. The Soil Conservation Service method has been used in simulating and calibrating the runoff hydrograph, for various composite curve number values. Due to the complex features of the catchment, and due to lack of adequate land use data, extensive field measurement studies are needed to obtain sound predictions..*

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**Reference:** *Fares, Y.R. and D. Yudianto; Hydrological Modeling of the Upper Citarum Catchment, West Java, Journal of Environmental Hydrology, Vol. 12, Paper 8, May 2004.*

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