

Calibration of Channel Roughness for Mahanadi River, (India) Using HEC-RAS Model

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Author(s)

Prabeer Kumar Parhi, R. N. Sankhua, G. P. Roy

ABSTRACT

Channel roughness is the most sensitive parameter in development of hydraulic model for flood forecasting and flood plane mapping. Hence, in the present study it is attempted to calibrate the channel roughness coefficient (Manning' s " n " value) along the river Mahanadi, Odisha through simulation of floods using HEC-RAS. For calibration of Manning' s " n " value the flood of year 2003 has been considered. The calibrated model, in terms of channel roughness, has been used to simulate the flood for year 2006 in the same river reach. The performance of the calibrated and validated HEC-RAS based model is tested using Nash and Sutcliffe efficiency. It is concluded from the simulation study that Mannnig' s " n " value of 0.032 gives best result for Khairmal to Munduli reach of Mahanadi River.

KEYWORDS

Hydrodynamic Model; Calibration; Simulation; Flood Hydrograph; Validation; HEC-RAS

Cite this paper

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