



[HOME](#) [ABOUT](#) [LOG IN](#) [REGISTER](#) [SEARCH](#)
[CURRENT](#) [ARCHIVES](#)

[OPEN JOURNAL SYSTEMS](#)

Home > Vol 9, No 2 (2009) > **Rai**

[Journal Help](#)

GIUH Based Transfer Function for Gomti River Basin of India

R. K. Rai, Alka Upadhyay, S. Sarkar, A. M. Upadhyay, V. P. Singh

USER

Username

Password

Remember me

Abstract

Geomorphologic instantaneous unit hydrograph (GIUH) can be used as a transfer function for modeling the transformation of excess rainfall into surface runoff, in which excess rainfall is an excitation (i.e. production function) to the hydrologic system. These models can be used to predict / forecast the temporal variation of the surface runoff at the outlet of ungauged basin, which is useful in the hydrologic / environmental engineering applications. The present study deals with the geomorphometric investigation and provides an efficient solution approach to derive the GIUH based transfer function and thus geomorphologic unit hydrograph (GUH) for the basin. Since, Gomti river basin is ungauged, therefore, to test the effectiveness of the approach two cases were considered. Firstly, the approach was tested on the catchment for which published UH data was available; and secondly, the approach was applied for the Gomti river basin for the derivation of GUH. To verify the derived GUH of the Gomti basin, a comparison was performed with the synthetic unit hydrograph (SUH) obtained from the Central Water Commission (CWC) procedure. Based on the comparison of the result, it may be revealed that the GUH with dynamic flow velocity of 0.68 m/s was close to the SUH.

NOTIFICATIONS

[View](#)
[Subscribe /](#)
[Unsubscribe](#)

JOURNAL CONTENT

Search

All ▼

Browse

[By Issue](#)
[By Author](#)
[By Title](#)

FONT SIZE

Keywords

Basin; CWC; Direct runoff; Geomorphology; Gomti river; Geomorphologic instantaneous unit hydrograph; Transfer function; Geomorphologic unit hydrograph; SRTM; Synthetic unit hydrograph; Ungauged basin

Full Text: [PDF](#)

INFORMATION

[For Readers](#)
[For Authors](#)
[For Librarians](#)

Rebacks

There are currently no rebacks.