A method for establishing stage-discharge rating curve ($H$-$Q$ curve) in a flood event was discussed, which used a runoff model to the rainfall data and the water level data observed in a basin. A quadratic function that represented the $H$-$Q$ relation in the river channel was built into the runoff model. When the observed water level hydrographs during a flood event was reproduced by the model, the $H$-$Q$ curve was established. (Fig.1)

The method was applied to some water level and flowing quantity observation stations in Shikoku in West Japan. The established $H$-$Q$ curve was compared with the $H$-$Q$ curve based on the runoff observation. The error margin of the established $H$-$Q$ curve and the observed was about 10% or less. (Fig.2)

The proposed method can be used to verify and adjust the observed $H$-$Q$ curve that may lead to an unsatisfied water budget of rainfall and discharge for the basin.

Keywords: stage-discharge curve ($H$-$Q$ curve), runoff model, rainfall data, water level data, water budget

E-mail: tamura@ce.tokushima-u.ac.jp
Tel. +81-88-656-9407
Fax:
HP: http://hydrology-lab.sakura.ne.jp/