

## **Real-time flood forecasting in the northwestern semi-arid area of China**

**LI REN, ZENGCHUAN DONG & YAQIONG SONG**

*State Key Laboratory of Hydrology, Water Resources and Hydraulic Engineering, Hohai Univ., Nanjing 210098, China*  
[renli@hhu.edu.cn](mailto:renli@hhu.edu.cn)

**Abstract** Some aspects of runoff yield and routing are unconventional in the semi-arid area of China. A nonlinear total runoff Volterra model is proposed, and the solution of the model is developed in this paper, together with the BP neural network model for flow correction. The research results of its application to the Qianhe basin in China indicate that the real-time flood forecasting model performs well due to its consideration of nonlinear factors in the northwestern semi-arid area of China.

**Key words** semi-arid area; real-time flood forecasting; Volterra model; neural network

---