

Determine the return period of flash floods by combining flash flood guidance and best fit distribution

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Abstract

Flash flood is a dangerous weather phenomenon, affecting humans and the economy. The identification, forecast of the changing trend and its characteristics are increasingly concerned. In the world, there have many methods for determining the characteristics of flash floods, in which flash flood guidance (FFG) is a fast, effective and widely used method. The main source of flash floods is short-term rainfall. In this study, we used the data of cross-sectional measurement at the tributaries and the hourly rain data from the automatic rainfall measurement stations in the Geum river basin. Besides, we use a combination of the flash flood guidance and the best fit distribution function to estimate the repeatability of flash floods for head-water catchments in Geum river basin. In which, FFG determines the threshold of rainfall for flash floods. The study has determined the best hourly rainfall distribution function for the Geum river basin and estimated the maximum rainfall of 1hr according to the return periods.

Keywords : Flash flood, FFG, best fit distribution

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