

Application of genetic programming to stream-flow extension

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Abstract

The main purpose of this paper is to present the genetic programming (GP) and apply it to extend the flow records (y) according to the nearby stream-flow station (x). Based on GP, the relationships between x and y can be expressed as parse trees. A fittest function type will be obtained automatically from this method. The model is applied to extend the annual stream flow records according to the nearby stream flow station. The results show that GP has better performance than the traditional linear regression method.

Keyword : Genetic programming; Genetic algorithms; System identification; Regression method; Hydrological data analysis