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Immune network algorithm in monthly streamflow prediction at Johor river

(Article)

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Abstract

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This study proposes an alternative method in generating future stream flow data with single-point river stage. Prediction of stream flow data is important in water resources engineering for planning and design purposes in order to estimate long term forecasting. This paper utilizes Artificial Immune System (AIS) in modelling the stream flow of one stations of Johor River. AIS has the abilities of self-organizing, memory, recognition, adaptive and ability of learning inspired from the immune system. Immune Network Algorithm is part of the three main algorithm in AIS. The model of Immune Network Algorithm used in this study is aiNet. The training process in aiNet is partly inspired by clonal selection principle and the other part uses antibody interactions for removing redundancy and finding data patterns. Like any other traditional statistical and stochastic techniques, results from this study, exhibit that, Immune Network Algorithm is capable of producing future stream flow data at monthly duration with various advantages. © 2006-2015 Asian Research Publishing Network (ARPN).

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