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Estimation of extreme floods by regional methods in  
Trois Rivières watershed - North West Algeria

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كل الحقوق محفوظة للمدرسة الوطنية العليا للري.

**Abstract:** The objective of this study is to estimate the extreme floods corresponding to different recurrence intervals in Trois Rivières watershed, a large sub-basin of the Macta basin (NW-Algeria). Two regional models are used flow-duration-frequency (Qdf) modelling and gradex method. A methodology for modelling QdF curves based on the so-called continuous converging model has been applied. The second model is gradex method which is a rainfall-runoff probability approach to computing extreme flood discharges in a river. The QdF model gives a complete description of the flood dynamics of Trois Rivières basin. Nevertheless, it is recommended to use this method with vigilance for the predetermination of severe floods for important return periods. However, the gradex method overestimates the extreme floods for different recurrence intervals. This study highlights that diverse methods should be employed for the regional analysis of extreme hydrological events.

**Key words:** Floods ; QdF modelling ; Gradex method ; Trois Rivières watershed ; Algeria

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