The title (العنوان):

Estimation of the probable maximum precipitation (PMP) in the Cheliff semi-arid region (Algeria)

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Abstract : The design of hydraulic infrastructure requires careful evaluation of extreme precipitation events. This paper presents an estimation of extreme precipitation events based on the Probable Maximum Precipitation (PMP) concept. The PMP approach is useful in determining probable maximum flood (PMF), which is required for the design of large hydraulic structures. Therefore, in this study, 24-h PMP estimates were performed through 43 rainfall stations located in the Cheliff watershed in Algeria. This estimation was implemented based on moisture maximization and Hershfield statistical method. The 24-h PMP values vary between 109.2 and 741.6 mm for the first approach and between 151.5 and 369.4 mm for the second approach. Using the moisture maximization approach, the 24-h PMP values obtained are approximately double those based on the Hershfield statistical method, with return periods ranging from 1000 to 28 10^6 years for the majority of stations in the Cheliff basin.

Key words : Probable maximum ; (PMP) ; Cheliff semi-arid region (Algeria)