

DETERMINATION OF PROBABLE MAXIMUM FLOOD WITH WAVELET ANALYSIS

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Probable maximum flood determination for the river Modau, Germany is presented by wavelet analysis of the 40 years daily discharge time series. Probable maximum flood is a value can be ever occurred in a certain (mainly long) time interval. Previous analysis of dynamic characteristic of the time series indicated that the discharge system can be described by a low-dimensional chaotic map. The applied Degaudenzi-Arizmedi's wavelet modulus maxima method is based on the standard wavelet transform and the multifractal characteristic of the time series. Several analyzing wavelet was choosen to accomplishing the maxima modulus transform and the multifractal properties (generalized dimension) of the input data series. The probable maximum flood value is found in correspondence with results of another statistical methods (such as dynamical scaling and neural networks).