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## Formula Derivation for Frequency Analysis and Parameter Estimation of Non-simple Sample in Multi-investigation Periods

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**Abstract:** Adding historical floods into sequential series is a common method to improve representativity and reliability of flood series in hydrologic frequency analysis. However, the methods of empirical frequency calculation are mainly used for sequential series and discrete series with single investigation period at present. In this paper, the method of empirical frequency calculation and formula for estimating mean value based on moment method for discrete series with multi-investigation periods were presented, which have been applied in frequency analysis of the flood peak series at a station.

**Key words:** investigation period; non-simple sample; method of unified processing; method of separately processing; moment method

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