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Review of recent advances in index flood estimation

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Abstract. Index flood estimation for regional flood frequency analysis needs to be based on the information available. The most appropriate method depends on the specific application and its choice requires a problem-oriented analysis. This paper presents a simple theoretical framework to deal with index flood estimation for a specific river site. The methodological approaches available for the purpose are reviewed. For each, the information required is specified and the reliability of the estimate, particularly desirable in risk analysis and management, is discussed. Where flood observations are lacking, indirect estimation must be undertaken using scenarios including those commonly met in hydrological practice; generally, these depend on the amount and type of information available. For each scenario, the methodologies are outlined, in order of the expected degree of complexity. After a guided analysis, an investigator can adopt the method providing the best tradeoff between effort in collecting and handling data and the resultant reliability which can be expected.

Keywords: direct and indirect methods, index flood estimation, reliability, scenarios.

[Final Revised Paper](#) (PDF, 786 KB)

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