

Applications of Analytical Probabilistic Approach in Urban Stormwater Modeling in New Zealand

Authors : Asaad Y. Shamseldin

Abstract : Analytical probabilistic approach is an innovative approach for urban stormwater modeling. It can provide information about the long-term performance of a stormwater management facility without being computationally very demanding. This paper explores the application of the analytical probabilistic approach in New Zealand. The paper presents the results of a case study aimed at development of an objective way of identifying what constitutes a rainfall storm event and the estimation of the corresponding statistical properties of storms using two selected automatic rainfall stations located in the Auckland region in New Zealand. The storm identification and the estimation of the storm statistical properties are regarded as the first step in the development of the analytical probabilistic models. The paper provides a recommendation about the definition of the storm inter-event time to be used in conjunction with the analytical probabilistic approach.

Keywords : hydrology, rainfall storm, storm inter-event time, New Zealand, stormwater management

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