

ABSTRACT

Applications that rely on Doppler radar estimates of precipitation include hydro-meteorology, engineering, floodplain management, and weather forecasting. In this article we provide a methodology to quantify, in a probabilistic sense, the uncertainty associated with Doppler radar estimates of precipitation and the propagation of such uncertainties in the rainfall-runoff model. Through multiple Monte-Carlo type simulations we demonstrate the variation in these calculations related to the uncertainty of estimation and a practical way in which the engineering management of reservoirs may use this methodology to assist them in decision-making.

KEYWORDS: Radar Precipitation Uncertainty, Rainfall-Runoff Model, Monte-Carlo Simulations

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