

Assessment of rainfall observed by weather radar and its effect on hydrological simulation performance

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Abstract Since the mid-20th century, using radar to measure rainfall has been deployed in many countries. The advantage of radar is that it can measure rainfall amounts and intensities over large areas during a storm. Therefore, this method has attracted the attention of meteorologists and hydrologists. However, radar rainfall measurement is an indirect method that can cause errors due to the signal transformations and the nature of the observed target. To improve the accuracy of radar rainfall measurement, it must be calibrated by using simultaneous recording gauge rainfall data. A case study on estimating the areal rainfall on Can Dang watershed, a drainage contributing area of Dong Nai River basin, by the Nha Be weather radar station in Ho Chi Minh City was undertaken. The effect of radar rainfall was assessed by means of applying the DHI NAM conceptual model. The results of the calibration and verification periods show that the radar rainfall provides a better hydrological simulation performance against that of the gauge data.

Key words hydrological simulation performance; radar rainfall