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## **Changes in Z-R Relationship with Geomorphological Characteristics**

Tae-Jeong Kim, Jin-Guk Kim, and Hyun-Han Kwon Chonbuk National University

The weather radar has the advantage of providing a very high spatial resolution of rainfall information. Recently, radar precipitation has been widely used in the field of hydrology especially for flood warnings and flash flood in urban areas. Radar rainfall is routinely estimated by using the existing reflectivity-rainfall intensity relationship so that there may be biases in their measurements. In this study, a generalized linear model (GLM) for calibrating the radar rainfall is proposed within a Bayesian framework. The biased corrected radar rainfall from the GLM can lead to more accurate rainfall estimates than the existing mean field biased correction method. Moreover, we explored the variability in the bias correction parameters corresponding to the geomorphological characteristics (e.g. latitude, longitude, altitude and separation distance) and further proposed a regionalized formula of the bias correction factors with the height and the separation distance.

KEYWORDS: Radar rainfall, Bias correction, Bayesian, Generalized linear model, Regionalization

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