

4.18 MEAN-FIELD-BIAS CORRECTION OF RADAR FORECASTS BY USING BACKWARD TRACKING METHOD

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The very-short-range-forecast (VSRF) model is an indispensable component of a flash flood warning system (FFWS). Two problems arise when the rainfall forecast is used for the FFWS. The first problem is the accuracy of the rainfall forecast itself. Unfortunately, the accuracy of rainfall forecast is not good enough to be used for the FFWS. To overcome this problem in Korea, a simple mean-field-bias-correction procedure is introduced to correct the rainfall forecast before applying to the FFWS. The G/R ratio (ground rain gauge rain rate/radar rain rate) is generally used for this purpose, as it is easily applicable. The second problem is related with the size of the storm. Especially, the G/R ratio, estimated by the conventional method by comparing the radar rain rate and the rain gauge rain rate over the given domain, could be inappropriate. That is, the G/R ratio may not be properly estimated for a localized storm. In this study, a backward storm tracking is introduced to locate the storm which will arrive at the area of interest in short time. The G/R ratio is estimated where the storm is located at present. The estimated G/R ratio will then be applied to correct the rainfall forecast, which is assumed to arrive at the area of interest in short time. This method of correcting the rainfall forecast has been applied to several locations in Korea with some storm events. As a result, it was found that the proposed method is more reliable and stable than the conventional method of estimating the G/R ratio.