레이더 강우와 지상강우 비교에 대한 임계값의 영향 평가

Effect of Threshold on the Comparison of Radar and Rain Gauge Rain Rate

윤정수*, 하은호**, 유철상***

Jungsoo Yoon, Eunho Ha and Chulsang Yoo

Abstract

In this study, the effect of threshold applied to the radar rain rate on the comparison of the radar and rain gauge rain rate was theoretically examined. The result derived was also evaluated theoretically, using the Bernoulli random field, and empirically, using Mt. Kwanak weather radar data. The results are summarized as follows. (1) In the application to the Bernoulli random field, it was found that the comparison of the radar and rain gauge rain rate with threshold does not introduce any systematic bias. (2) The same results could also be derived in the application to Mt Kwanak weather radar data. In all cases with several radar bin sizes and thresholds considered, the bias was estimated to be far less than 10% of the mean of the rain gauge rain rate. (3) However, in the comparison with threshold applied to both the radar and rain gauge rain rate, the bias was estimated to be higher than 20%. That is, the systematic bias was introduced. This result indicates that the comparison with threshold applied to both the radar and rain gauge rain rate should not be used.

Keywords : radar, 1.5 km CAPPI data, G/R ratio, RMSE, gap filler radar

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* 정회원・고려대학교 공과대학 건축사회환경공학과 박사과정 ・ e-mail: berserk_kr@lycos.co.kr
** 정회원・연세대학교 과학기술대학 정보통계학부 교수 ・ e-mail: statha@yonsei.ac.kr
*** 정회원・고려대학교 공과대학 건축사회환경공학과 교수 ・ e-mail: envchul@korea.ac.kr