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Comparison of Quantitative Precipitation Estimation Using Spatial Interpolation methods in Bukhan River Basin

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Quantitative precipitation estimation is needed to reduce damages from weather disasters such as torrential rain. This study is dealt with estimates of the quantitative precipitation using multiple spatial interpolation methods and compares the results. Inverse distance weight method and k-nearest neighborhood algorithm were considered as a deterministic approach and the general additive model and kriging methods were used as a stochastic approach. To evaluate the prediction performance, leave-one-out cross-validation was performed with the root mean squared error (RMSE), mean absolute error (MAE), bias, and correlation coefficient. The research data were rain gauged and radar data in the Bukhan river, which were collected from May 2018 to August 2019. The results showed that the inverse distance weight method reflected the spatial rainfall characteristics well. However, caution is needed because the best models vary depending on the pattern of rainfall in the sense of RMSE.

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