# Modeling and validation of precipitation estimation with Doppler radar and wind velocity using ANN

박기호, 김도연, 양대륙*
고려대학교
(dryang@korea.ac.kr*)

Doppler radar has been one of the most useful equipment in weather forecasting and precipitation estimation because it has some desirable characteristics such as time sensing, broad coverage, high resolution and etc. But because of its undesirable characteristics such as spatial discrepancy between surface and radar reflectivity aloft and sampling noise, direct application of radar reflectivity on precipitation estimation is not desirable.

In this study, for the precipitation estimation from radar data, ANN is used and trained to match the precipitation from radar data to actual rainfall. To overcome the spatial discrepancy between radar data and actual rainfall, wind velocity vector is used to predict cloud movement. To compare the improvement of this model, an ANN is constructed for comparison using radar reflectivity at actual rainfall measurement at time t as the only input. And validation of the model is conducted to the other region for checking the robustness of the model.