

Case Study of Ground-based Glaciogenic Seeding on Orographic Clouds over the Pyeongchang Region

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In this study, experimental cases were analyzed to investigate the effects of ground-based AgI seeding on clouds over Pyeongchang region from 2012 to 2015. The NOSEED and SEED periods were defined based on the simulation results of the AgI concentration by in the Weather Research and Forecast (WRF) model with the addition of the AgI point-source module at the target site surface. At target site, vertical reflectivity based on micro rain radar increased at altitudes below 1 km during the SEED period, when the cloud thickness was sufficient. In those cases, the total snow particle number concentration and mean size measured by PARSIVEL disdrometer also increased after seeding. In all the cases, the 1.5 km radar CAPPI was absent or negligible after seeding, and thus the inflow of natural precipitation into target area appeared to be low. In one case that did not show changes after seeding, it is analyzed that a sufficient cloud depth was not supplied to the seeding region due to the blocking effect of the Taebaek Mountains.

Acknowledgements

This study was funded by the “Research and Development for KMA Weather, Climate, and Earth System Services (NIMS-2016-3100)” of the National Institute of Meteorological Sciences.