Radar-Based Statistical Characteristics of Convective Storms in the West Coast of the Korean Peninsula

Sung-Hwa Jung
Research and Training Team for Future Creative Astrophysicists and Cosmologists, Dept. of Astronomy and Atmospheric Sciences and Center for Atmosphere Remote Sensing, Kyungpook National University, Korea
GyuWon Lee (Dept. of Astronomy and Atmospheric Sciences and Center for Atmosphere REmote Sensing, Kyungpook National University, Daegu, Korea(ROK))

E-mail: jarksal@gmail.com

Radar-based climatology of convective storms can provide guidance for forecasting convective storms and expand our knowledge about convective storm activities. Numerous studies have been carried out on the statistical characteristics of convective storm activities in different regions of the world. However, similar studies have been never carried out over the Korean Peninsula. In this study, we will build a radar-based climatology of convective cell activities on the west coast of the Korean Peninsula and to provide a better knowledge of convective storm activities based on long-term observations. The area of interest is characterized by a coastline and complex terrain.

In this study, the geometric characteristics (e.g., area, top height, volume, and oblateness), reflectivity factors (mean and maximum reflectivity), and water and ice mass contents (e.g. VILs) of convective storms are objectively derived and compared to those of the previous studies in different regions. The temporal and spatial characteristics of convective storm occurrence are also presented. We found the evident diurnal cycle of the storm occurrence. The statistical characteristics of convective cells are investigated at various horizontal scales (D-scale, C-scale, and B/C-scale by GATE project) and compared to those of the previous studies in different regions.