

### 13.39 RAINFALL ESTIMATION IN HIGH SPATIOTEMPORAL RESOLUTION USING X-BAND DUAL-POL RADARS IN SEOUL METROPOLITAN AREA

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We have developed a monitoring and forecasting system of flash flood in the Seoul metropolitan area. Dual-polarized (dual-pol) X-band radars are newly installed in the Seoul metropolitan area on Feb. 2017, to overcome blind zone of S-band radar network by collecting high spatiotemporal resolution radar data.

In this study, rainfall estimation is performed using two X-band radars (XKOU, XYOU) in Seoul area. Heavy rainfall cases of X-band radar data of 2017 are used. Quality control, attenuation and system bias corrections of X-band radar data are performed using polarimetric variables. Climatological equations ( $A_H$ - $K_{DP}$ ,  $A_{DP}$ - $K_{DP}$ ,  $Z$ - $Z_{DR}$ ,  $R(Z)$ ,  $R(Z, Z_{DR})$ ,  $R(K_{DP})$ ,  $R(A_H)$ ) are also defined using drop size distributions from two-dimensional video disdrometer (2DVD) and T-matrix scattering simulation (Thurai et al., 2007). Hybrid surface Rainfall technique (HSR) is adapted to avoid partial beam blockage of terrain effect and composite of HSR fields from XKOU and XYOU is generated. Rain gauge and S-band rainfall estimation results are used for comparative validation of various rainfall products.

#### Acknowledgements

This research was supported by a grant (18AWMP-B079625-05) from Water Management Research Program sponsored by Ministry of Land, Infrastructure and Transport of Korean government.