

13.42 TESTING OF CONVENTIONAL ATTENUATION ESTIMATION ALGORITHMS WITH OPERATIONAL RADARS IN DIFFERENT BANDS

ALEKSANDR LIALIUSHKIN¹, ALEXANDER SOLONIN¹, NIKOLAY BOCHARNIKOV¹, TATIANA BAZLOVA¹, NADEZHDA YAKIMAINEN¹, VASILY OLENEV¹

¹ Institute of Radar Meteorology (IRAM), Russia
las@iram.ru

Quantitative precipitation estimation and severe weather detection require accurate measurements of radar reflectivity and polarimetric features. Intense precipitations might cause significant path attenuation in C-band, and especially in X-band, leading to underestimations in end-user radar products. Several single- and dual-polarization methods are commonly used for attenuation correction with the choice on which one to apply typically made by comparing resultant radar quantities against disdrometer or rain gauge data.

The paper presents a performance analysis of these rain attenuation estimation algorithms. Two operational weather radars, one C-band and the other X-band, with 16 km distance between them, are used for validating the estimates. The C-band radar data after correction was regarded as a ground truth being less prone to the attenuation effects. Disdrometer data was used as well for absolute calibration of the radars.