Validation of satellite precipitation estimates over Japan using the gauge-calibrated ground radar network

14.15

Nao Yoshida, Takuji Kubota, Kosuke Yamamoto (JAXA/EORC)

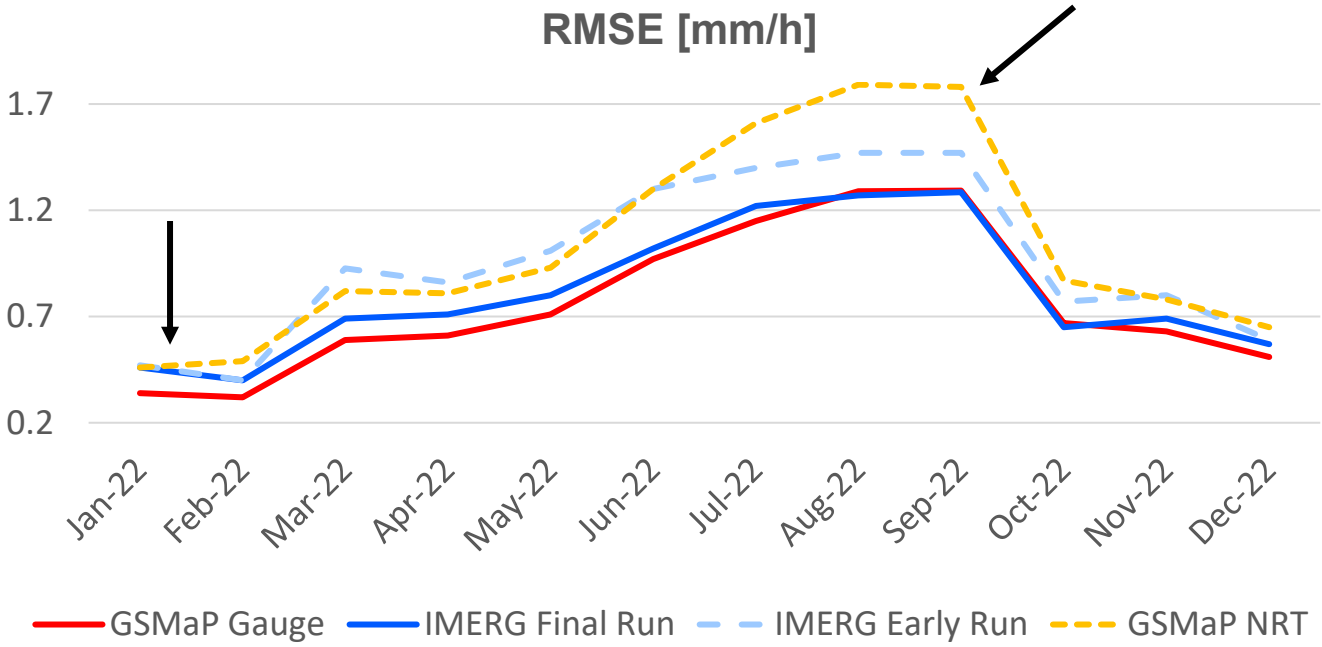
- We have validated GSMaP [Kubota et al., 2020] and IMERG [Huffman et al., 2020] over Japan using the gauge-calibrated ground radar network data (Radar-AMeDAS) developed by the JMA [Makihara et al., 1996] as a true data.

Table1 Annual mean precipitation [mm/day]

GSMaP NRT	GSMaP Gauge NRT	IMERG Early Run	GSMaP Gauge	IMERG Final Run	RA
4.52	**4.86**	4.76	4.78	**4.97**	**5.35**

Table2 Annual mean RMSE [mm/h]

GSMaP NRT	GSMaP Gauge NRT	IMERG Early Run	GSMaP Gauge	IMERG Final Run
1.28	1.22	**1.11**	**0.92**	0.94



- GSMaP Gauge NRT adjusts the precipitation rate compared to GSMaP NRT.
- RMSE decreases as calibration by gauge and using longer latency dataset. GSMaP Gauge has better accuracy in RMSE.
- RMSE of GSMaP NRT tends to worsen especially heavy precipitation was observed in summer.
- RMSE of IMERG Final Run tend to worsen in winter.

These results are discussed in detail in the poster!