

The mean difference (MD) and root mean square error (RMSE) of temperature, vapor density and relative humidity obtained from radiosonde observations and MWR products under clear-sky, cloudy-sky, and rainy-sky conditions are presented. The values of MD and RMSE refer to errors of radiosonde variables relative to MWR products.

Table S1. MD and RMSE values between RAOB and MWR.

		Clear-sky		Cloudy-sky		Rainy-sky	
Type		MD	RMSE	MD	RMSE	MD	RMSE
T07	ave	0.2822	0.9224	0.2199	0.8067	-0.4157	1.1444
	max	1.1386	1.358	0.944	1.3939	0.2292	1.5399
	min	-0.5648	0.68	-0.6156	0.4001	-0.9742	0.7664
T19	ave	0.1212	0.9359	0.2414	0.991	0.5366	1.4211
	max	0.9294	1.7362	1.224	1.2612	1.329	1.6209
	min	-0.3717	0.4081	-0.5469	0.6031	-0.0638	1.002
VD07	ave	0.0811	0.4419	-0.3607	0.3214	-0.5171	0.4902
	max	0.6492	0.8289	0.1138	0.7126	0.1139	0.8844
	min	-0.9611	0.0104	-1.3279	0.0124	-1.2273	0.0119
VD19	ave	-0.0666	0.4253	-0.1378	0.315	0.0344	0.3891
	max	0.2915	0.791	0.0843	0.6491	0.5934	0.7737
	min	-0.6765	0.01	-0.6799	0.0371	-0.4878	0.0599
RH07	ave	-1.5909	10.227	-2.426	7.2901	-4.1536	7.0493
	max	1.3676	17.0122	5.7115	15.1153	2.3618	14.9963
	min	-5.0809	3.0672	-12.1549	2.2237	-9.8506	2.797
RH19	ave	-1.5069	11.0179	-2.4795	8.7616	-4.7248	9.4473
	max	3.6164	14.4699	2.1363	14.1467	0.9241	14.2414
	min	-5.9185	5.7472	-8.3138	3.4379	-11.803	5.5414