Advances in Meteorology

Supplementary Materials: Evaluation of the precipitation forecast of the system Numerical Tools for Hurricane Forecast

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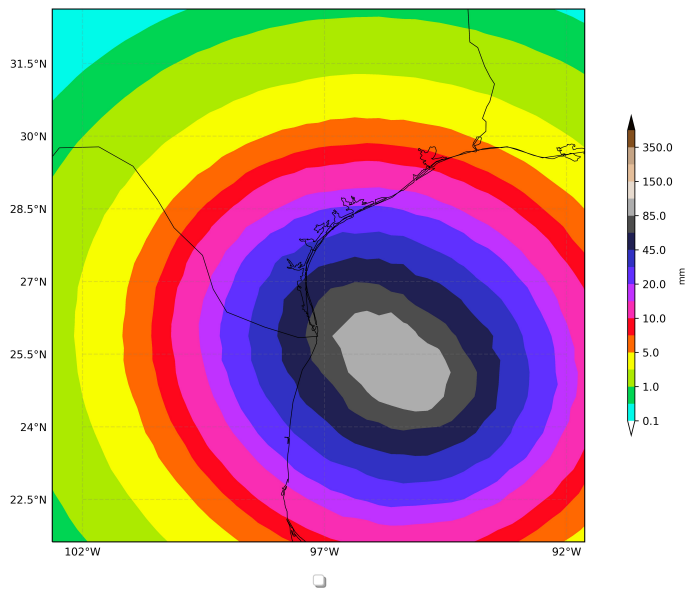

Figure 1. Precipitation distribution predicted by R-CLIPER for hurricane Harvey at 2400 UTC, August 25th, 2017.

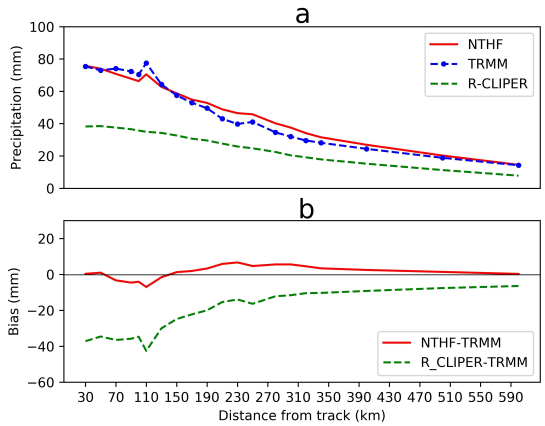

Figure 2. Mean rainfall radial distribution for 48 hours. a) The values determined from TRMM, and calculated by the systems NTHF and R-CLIPER. b)The bias between the system's predictions and the measurements of TRMM.

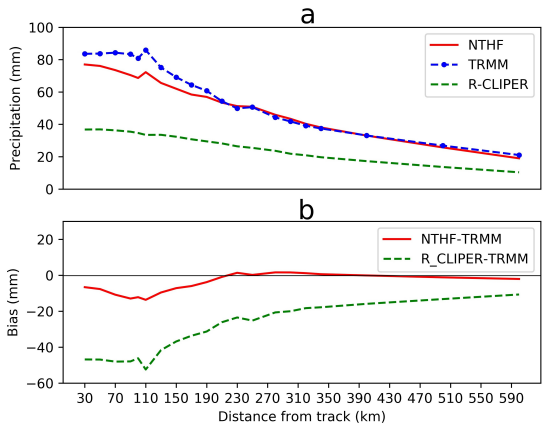

Figure 3. Mean rainfall radial distribution for 72 hours. a) The values determined from TRMM, and calculated by the systems NTHF and R-CLIPER. b) The bias between the system's predictions and the measurements of TRMM.

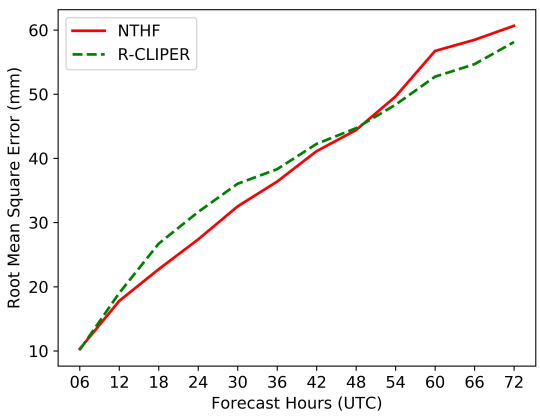

Figure 4. Root mean square error. The time dependence of RMSE for both systems.

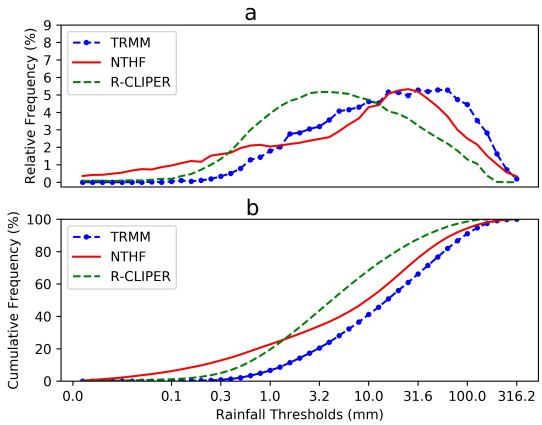

Figure 5. Frequency distribution of rain flux for 48 hours. a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

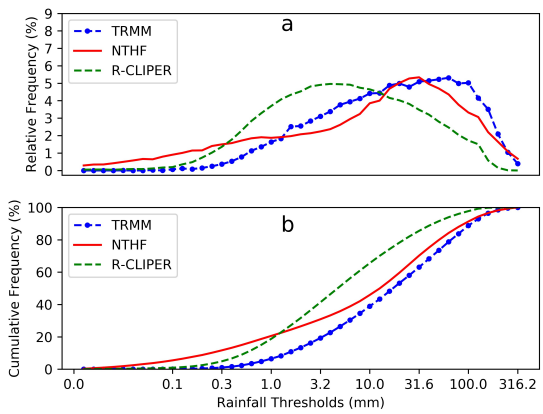

Figure 6. Frequency distribution of rain flux for 72 hours. a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

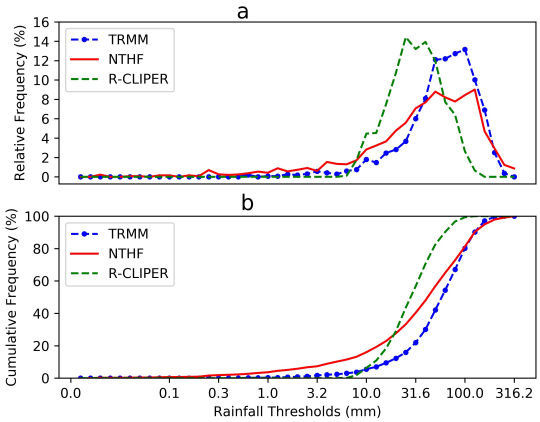

Figure 7. Frequency distribution of rain flux for 24 hours in the band $0 - 100$ km a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

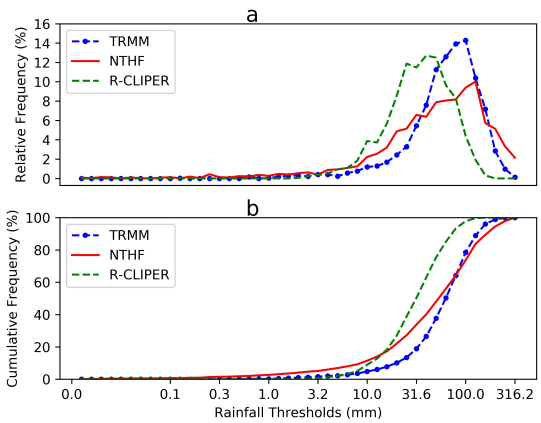

Figure 8. Frequency distribution of rain flux for 48 hours in the band $0 - 100$ km a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

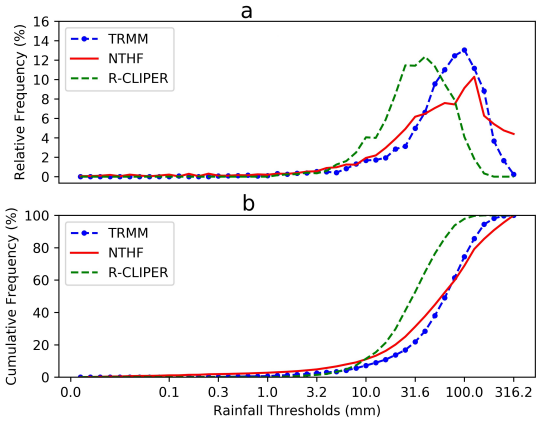

Figure 9. Frequency distribution of rain flux for 72 hours in the band $0 - 100$ km a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

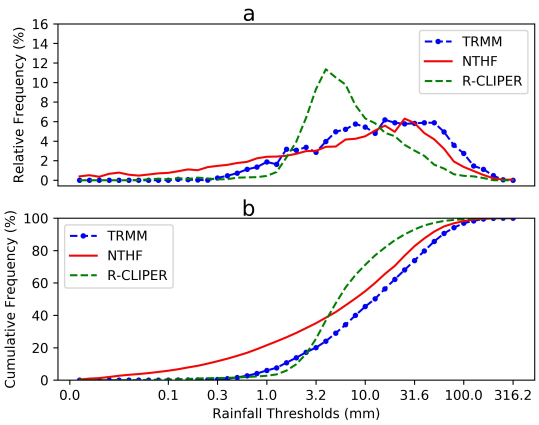

Figure 10. Frequency distribution of rain flux for 24 hours in the band $300 - 400$ km a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

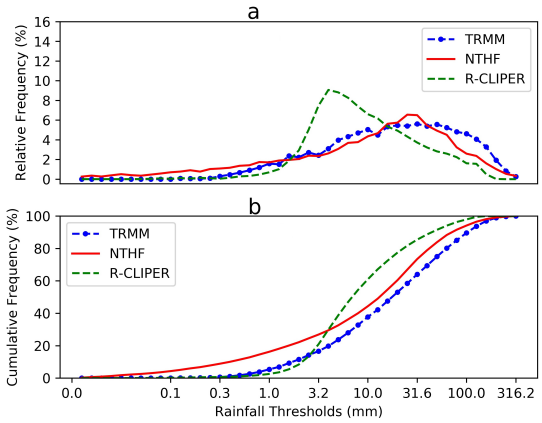

Figure 11. Frequency distribution of rain flux for 48 hours in the band 300 − 400 km a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.

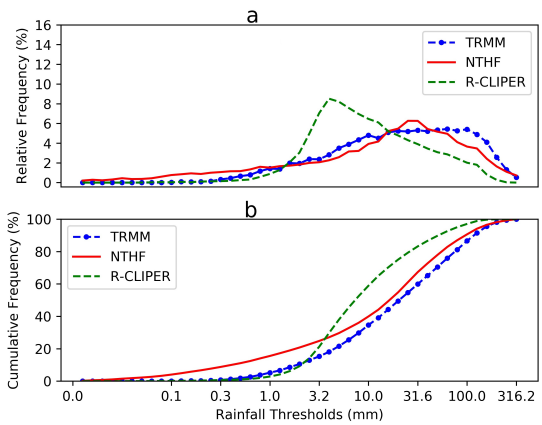

Figure 12. Frequency distribution of rain flux for 72 hours in the band 300 − 400 km a) The probability distribution function of the observed (blue line) frequency of rainfall above a given threshold, as well as NTHF (red line) and R-CLIPER (green line). b) Cumulative distribution function of the observed and predicted data, calculated from data of frequency distribution.