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MeteoConsult
A MeteoGroup Company

Close-range radar rainfall estimation and error analysis

Remco van de Beek[1,2], Hidde Leijnse[3], Pieter Hazenberg[2,4], Remko Uijlenhoet[2]

THE UNIVERSITY OF ARIZONA

Royal Netherlands Meteorological Institute
Ministry of Infrastructure and the Environment
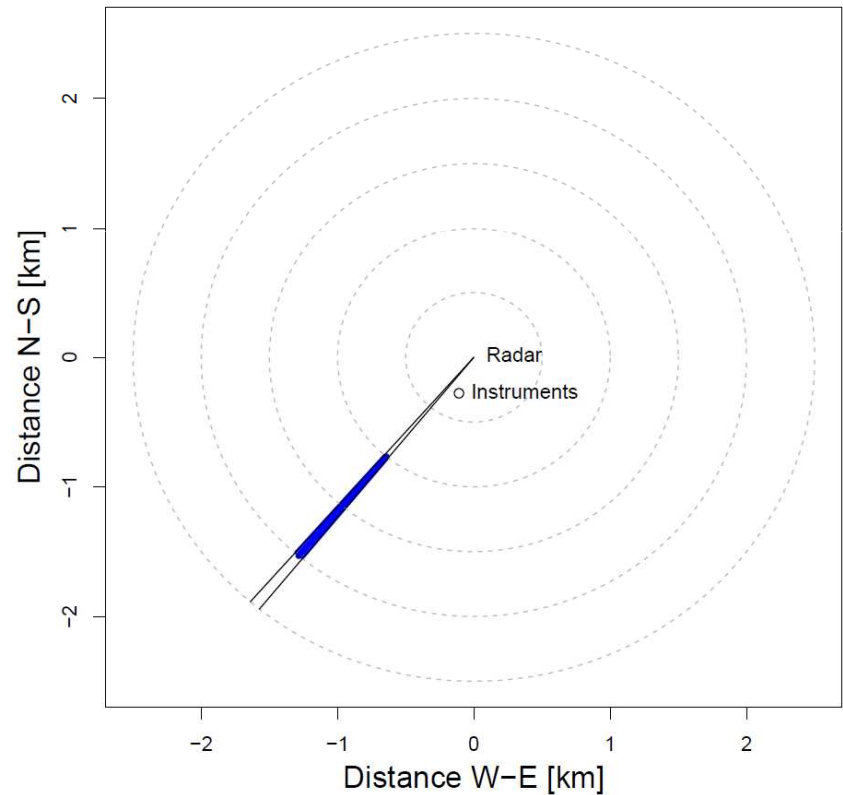
[1]MeteoGroup, The Netherlands
[2]Wageningen University , The Netherlands
[3]Royal Netherlands Meteorological Institute , The Netherlands
[4]University of Arizona, Tuscon, USA

Overview

- **Data**
- **Calibration**
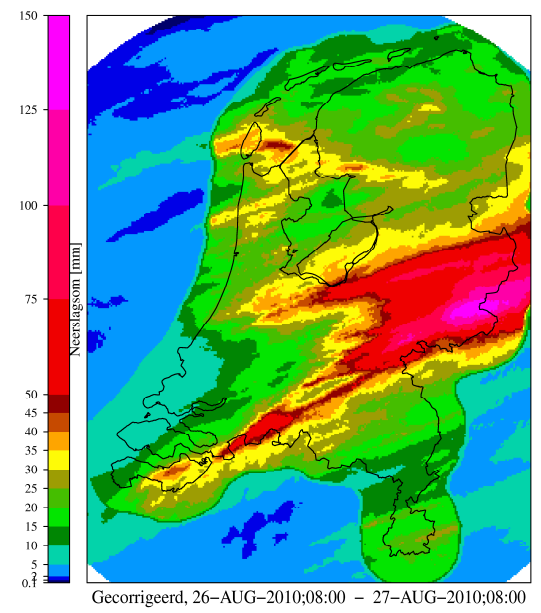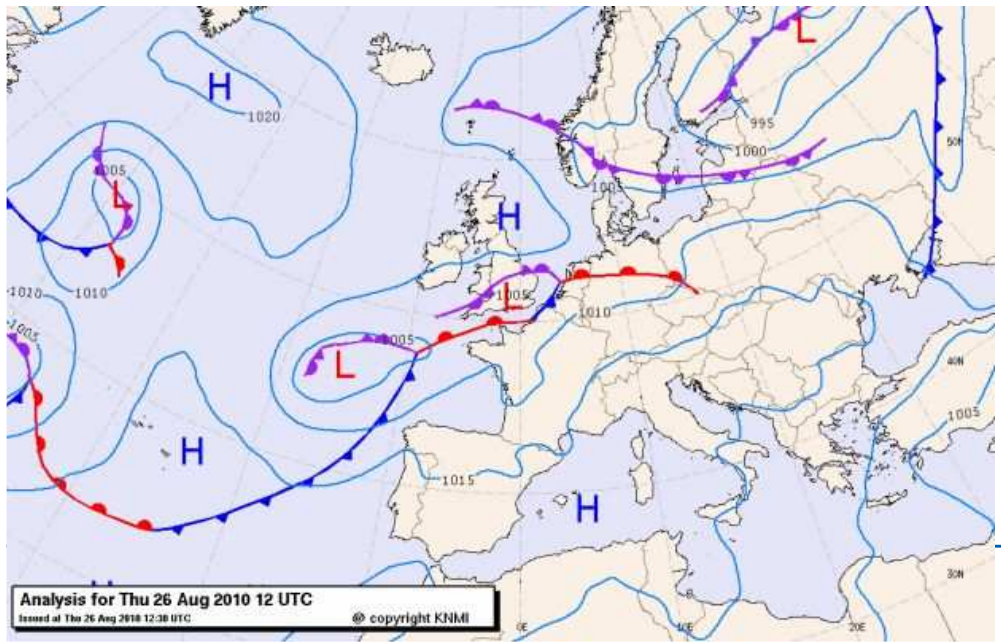- **Clutter Correction**
- **Wet Radome Attenuation**
- **Z-R relations**
- **Results**

Instruments and data

Instrument	Time resolution [min]	Unit
Raingauge	10	R [mm]
C-band radar	5	Z [mm^{6}mm^{-3}]
Disdrometers: 1. Parsivel 2. LPM	 1 1	 R [mm] & Z [mm^{6}mm^{-3}] R [mm] & Z [mm^{6}mm^{-3}]

Rainfall event

	De Bilt		Hupsel	
	mm	h/day	mm	h/day
25 Aug	6.4	5.7	1.6	3.0
26Aug	50.6	18.3	142.3	19.5
27 Aug	3.0	5.5	14.6	4.5
total	60.0	29.5	158.5	27.0

Analysis for Thu 26 Aug 2010 12 UTC
Issued at Thu 26 Aug 2010 12:30 UTC   @ copyright KNMI

Gecorrigeerd, 26−AUG−2010;08:00 − 27−AUG−2010;08:00

Timeseries and dropsize distribution
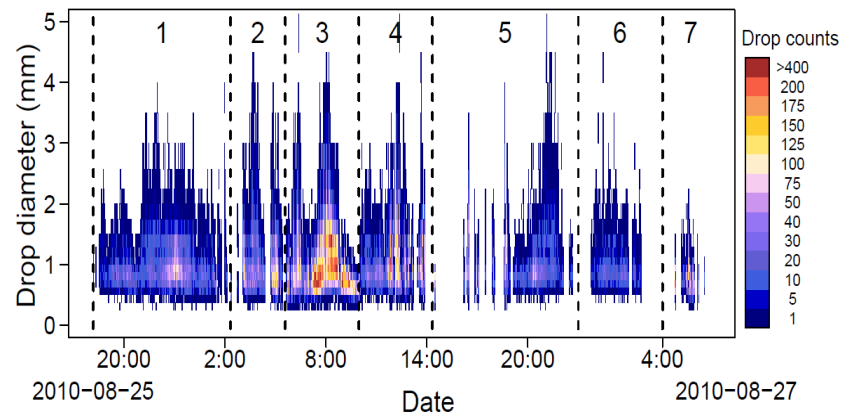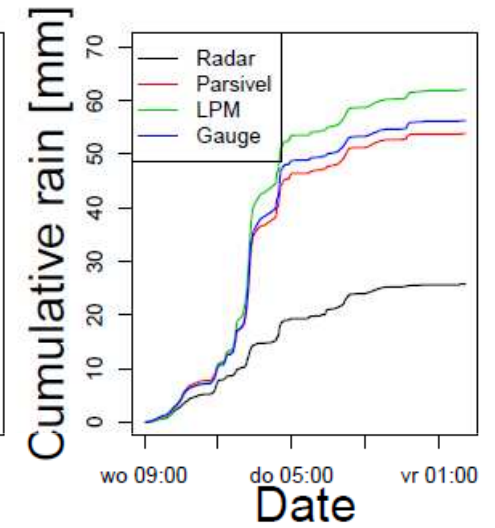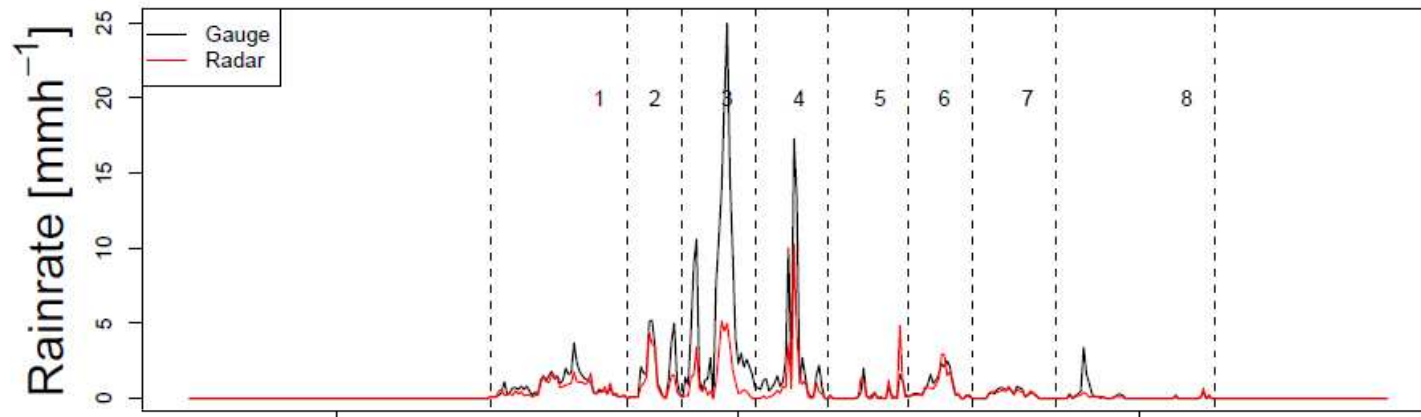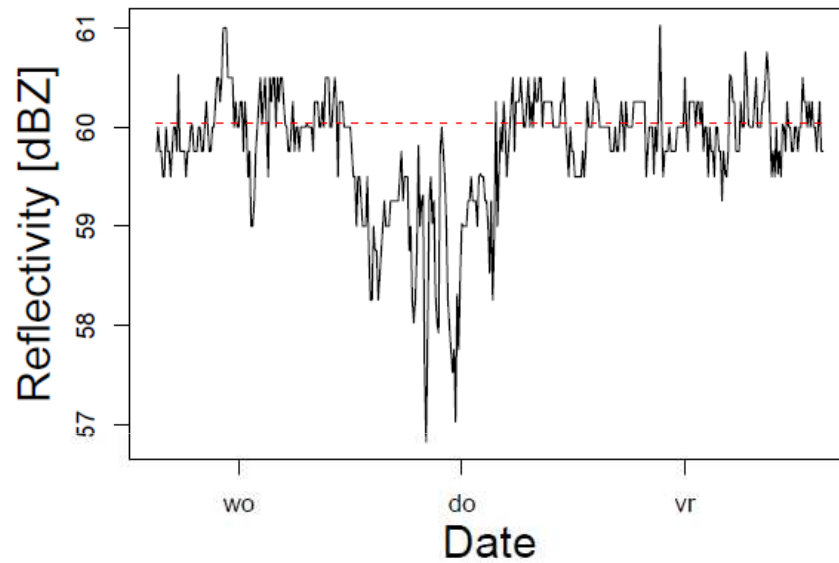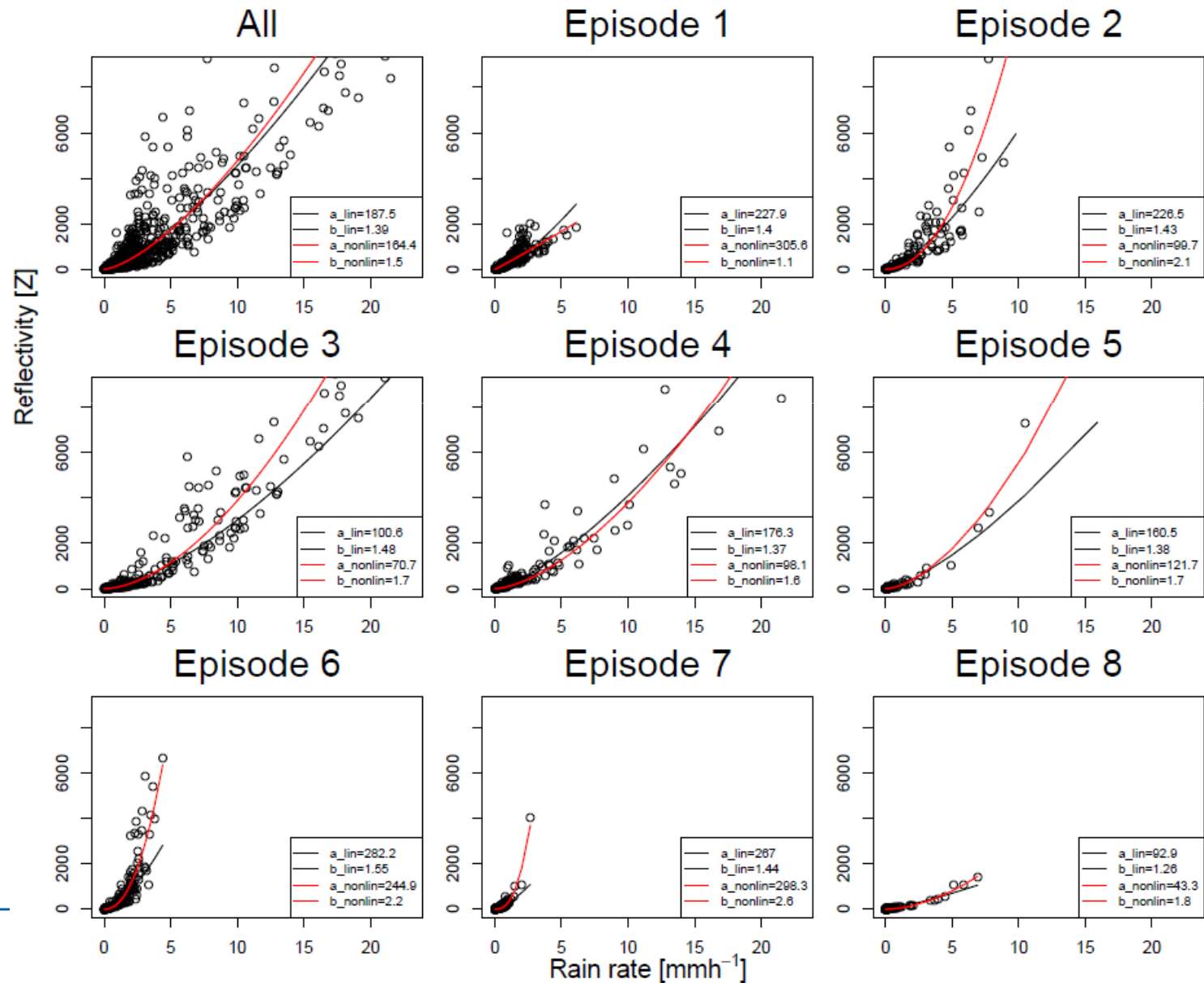
Clutter Correction
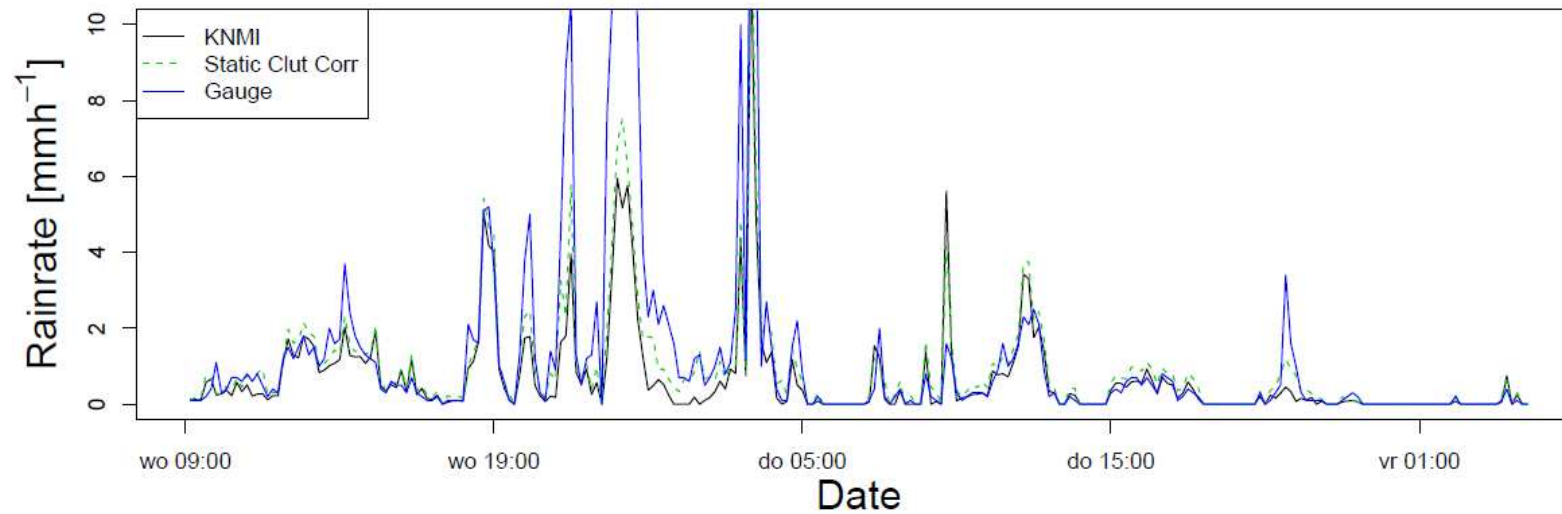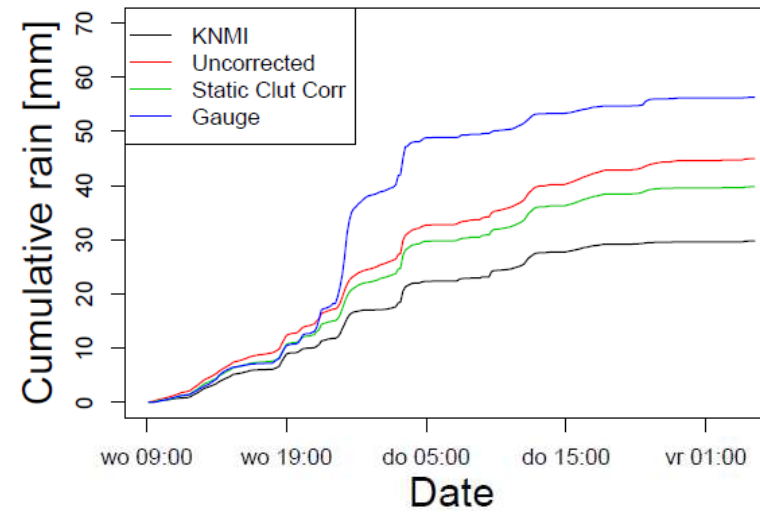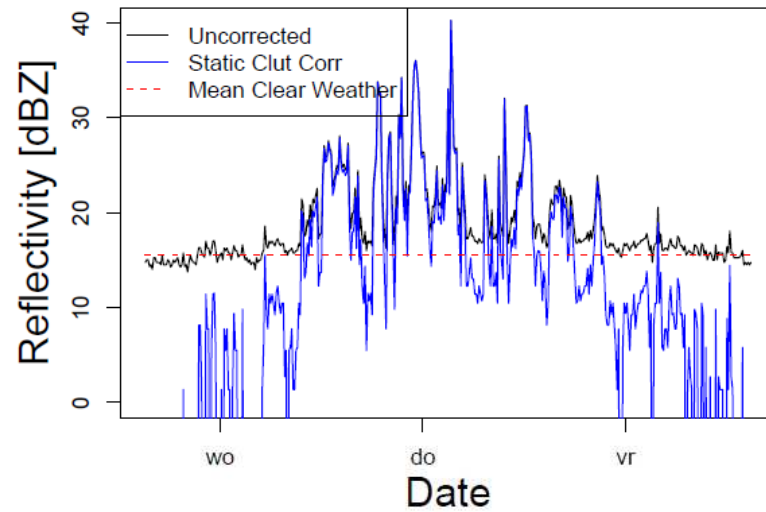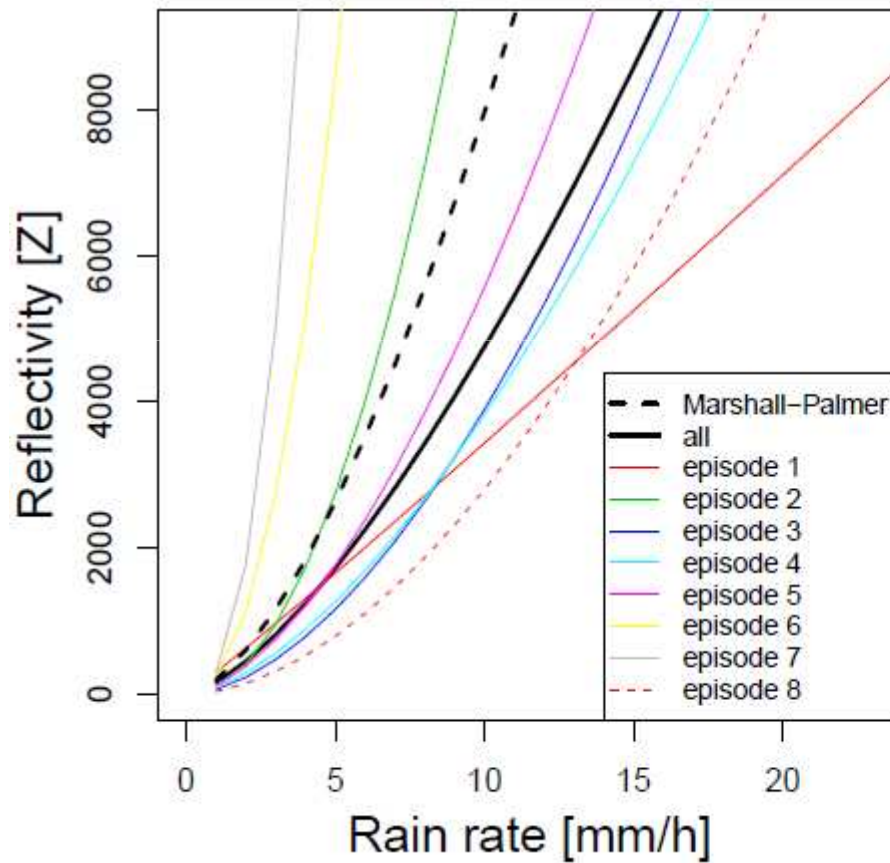
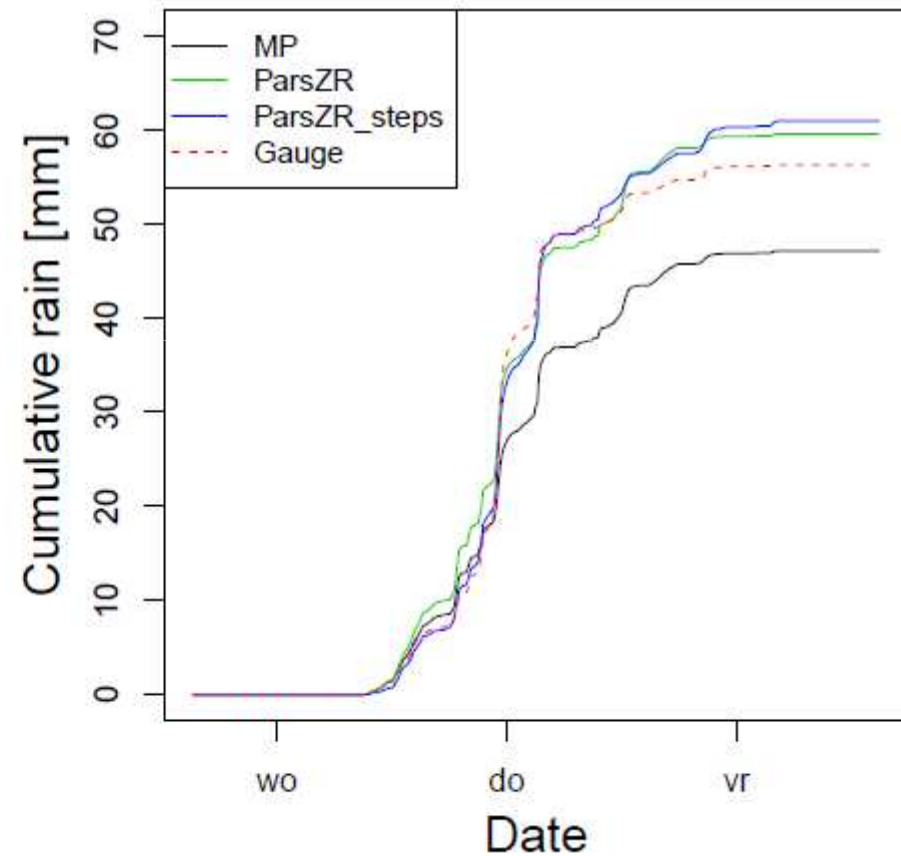# Wet Radome Correction
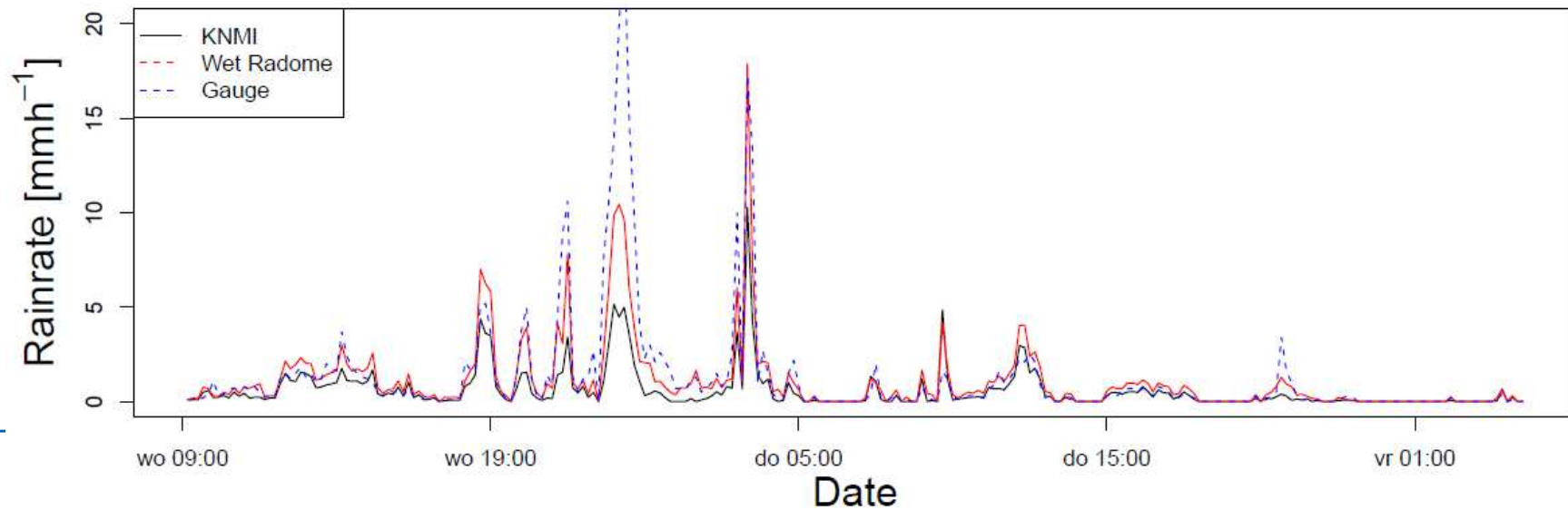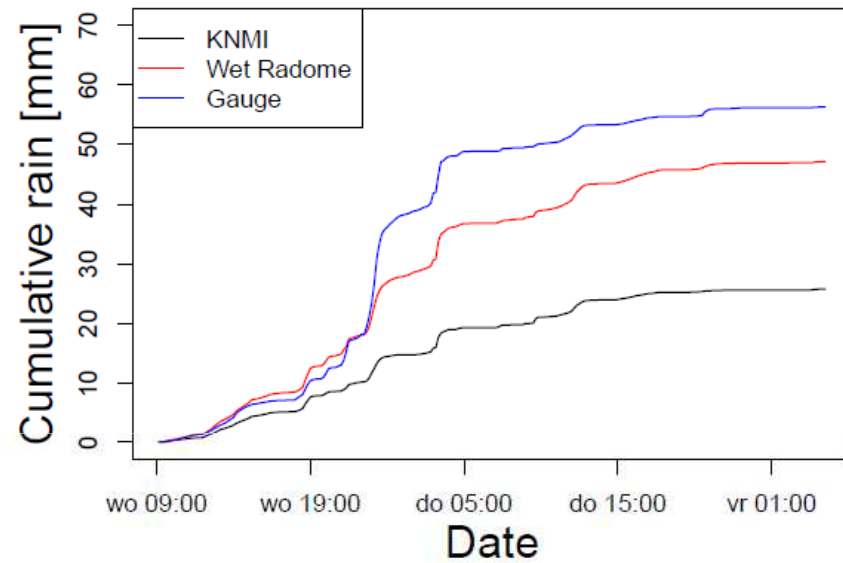
Z-R relations per episode

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Z-R relations and final result

Non-linear fits

Wet Rad. & Calibration Corr.

Radar-disdrometer comparison
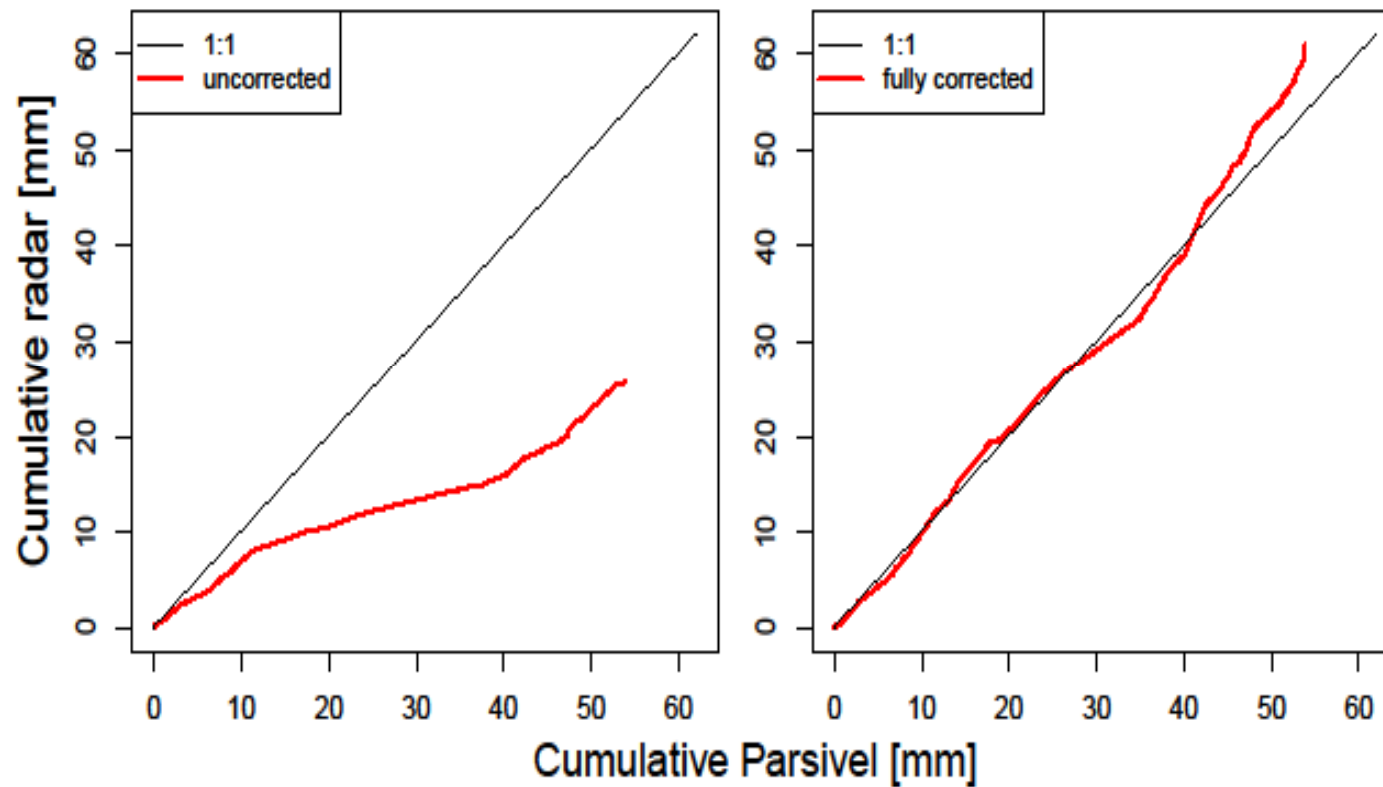
Conclusions and outlook

Simple corrections can give large improvements

- **Clutter**
- **Wet Radome Correction**
- **Z-R relations**

Future
- **More cases**
- **Apply wet radome correction to entire image**