

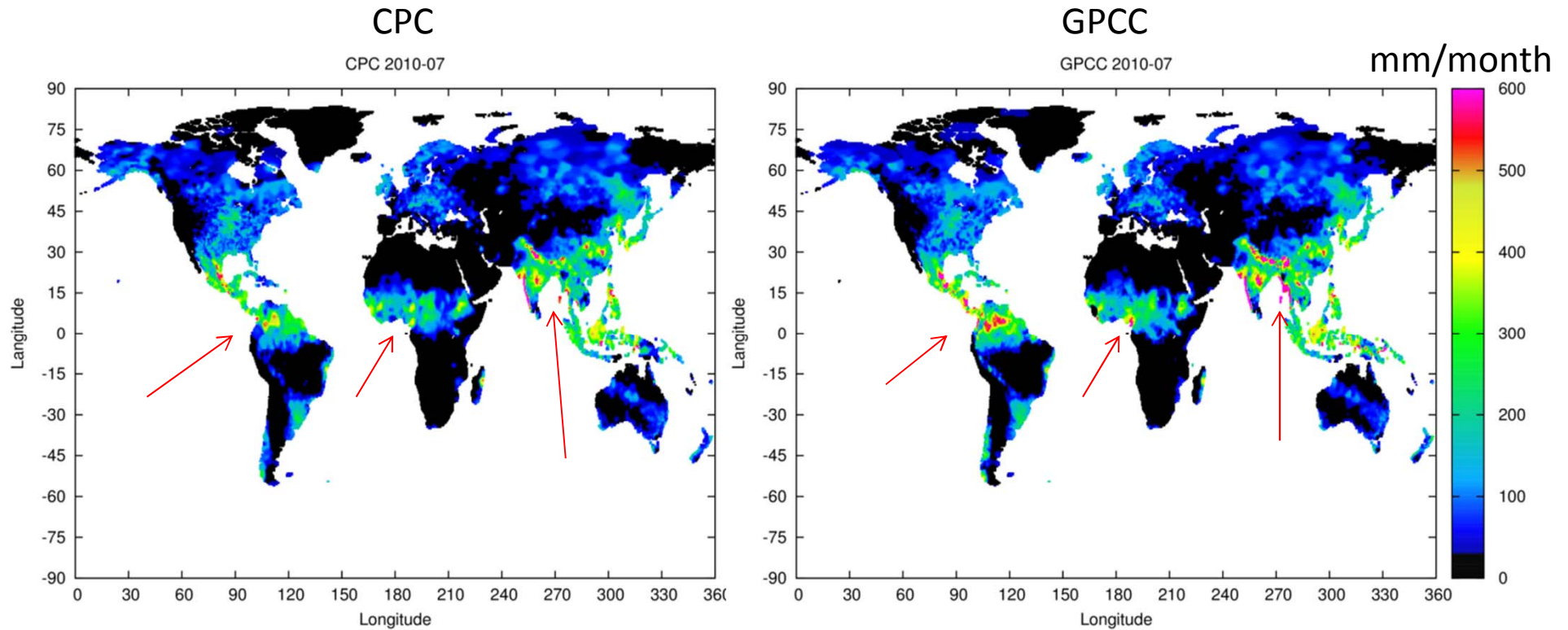
Development and evaluation of the gauge adjusted GSMaP

Tomoo Ushio, and Tomoaki Mega
(Osaka University)

Contents

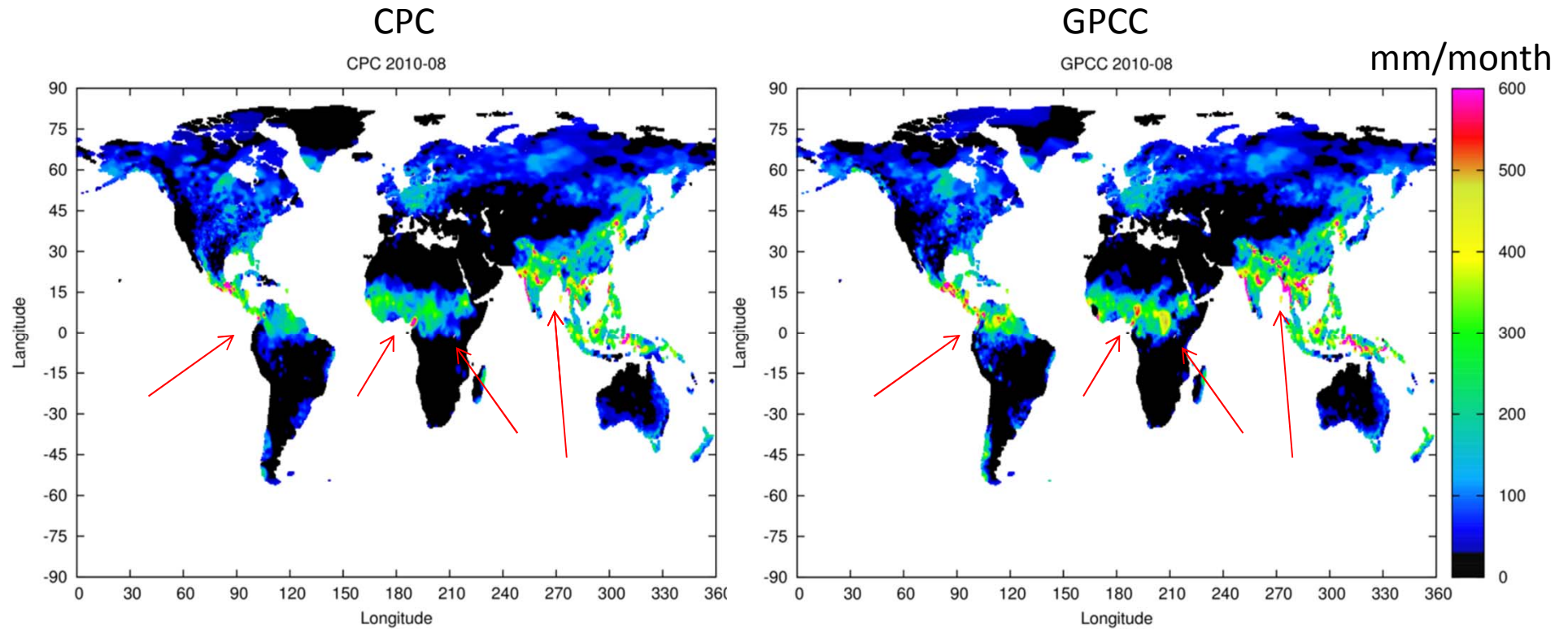
1. NOAA center of (CPC) Rain gauge data
Global Precipitation Climatology Centre
(GPCC)
2. Comparison between GSMaP MVK and
GSMaP Gauge

Monthly rainfall July 2010



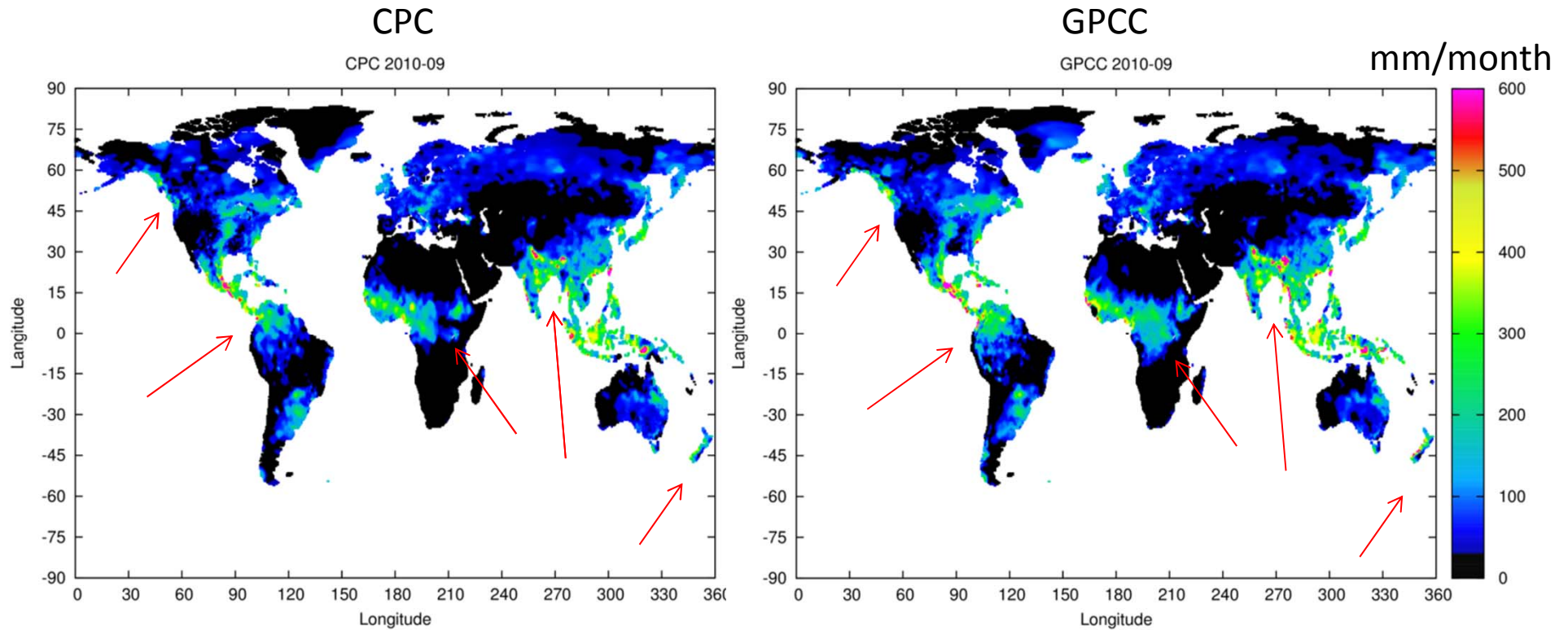
CPC and GPCC show a similar trend.
Details are different.

Monthly rainfall August 2010



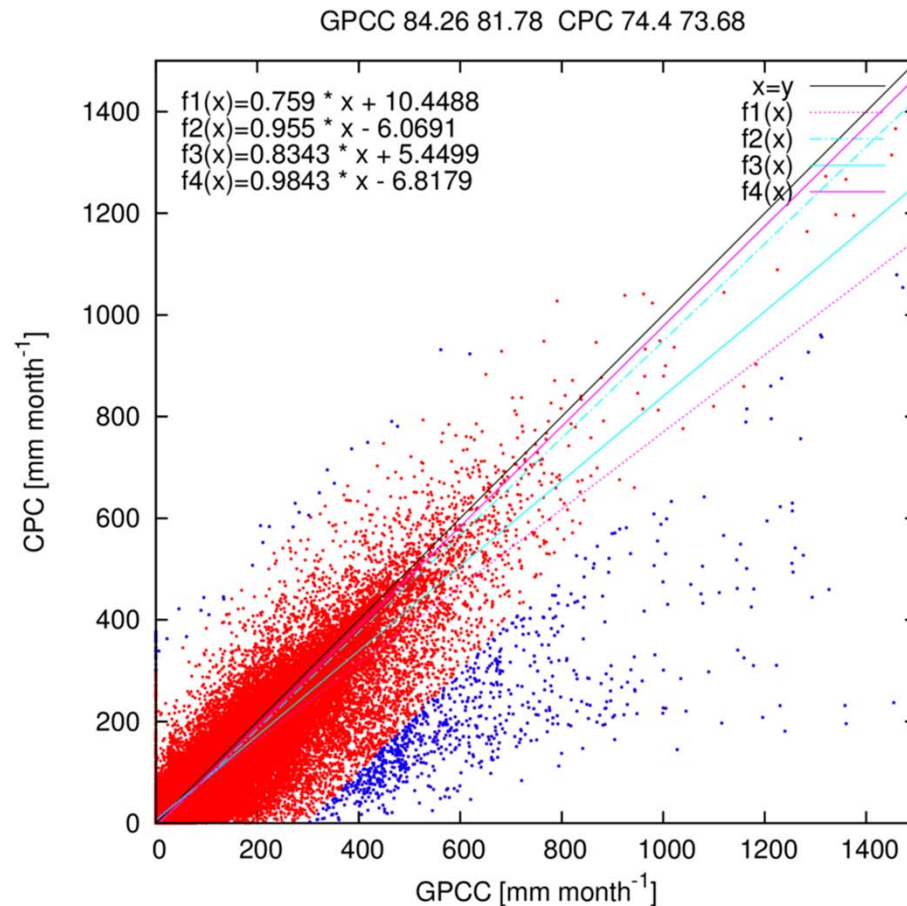
CPC and GPCC show a similar trend.
Details are different.

Monthly rainfall September 2010



CPC and GPCC show a similar trend.
Details are different.

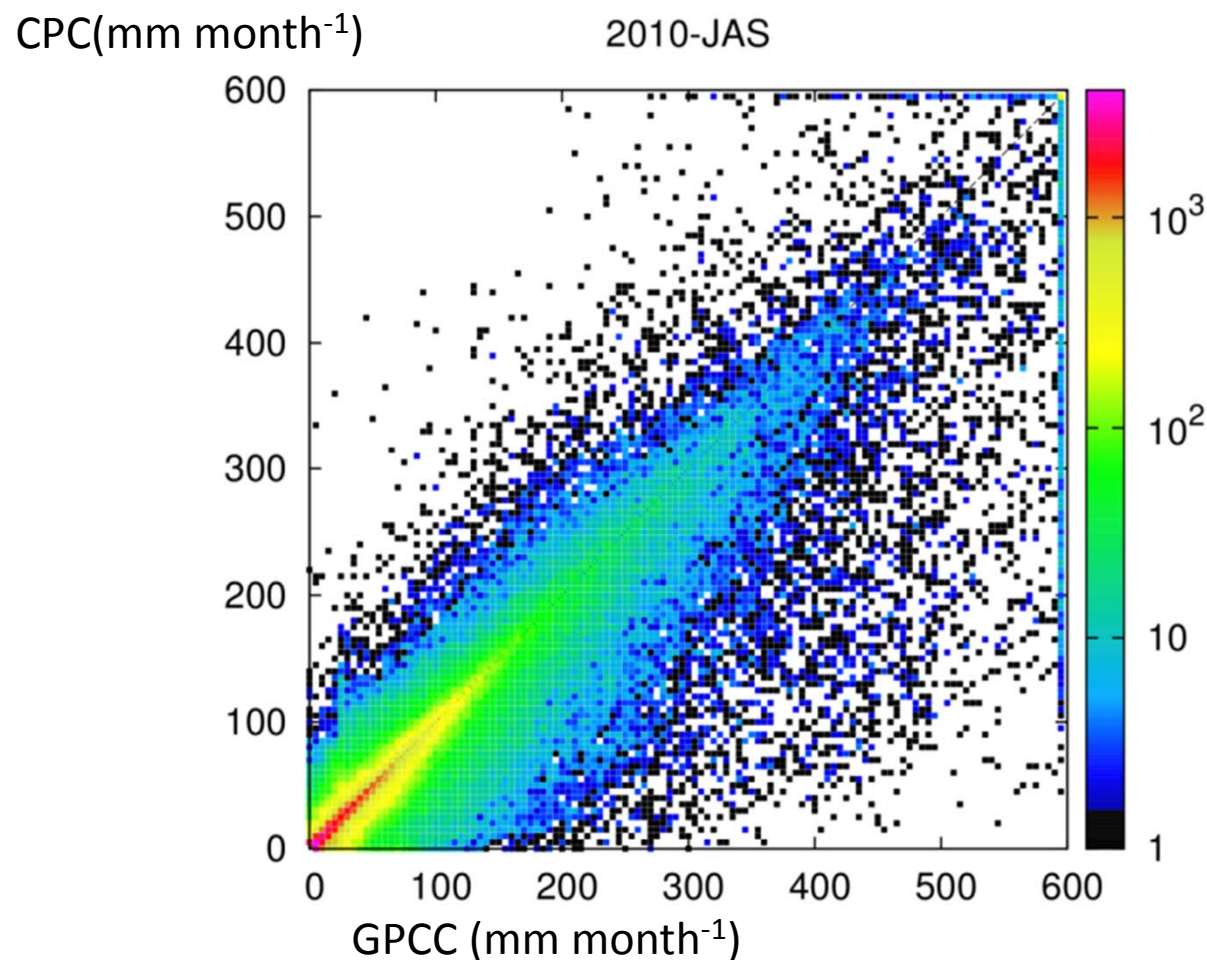
Scatter plot of monthly rainfall (CPC vs GPCC)



Red and blue points indicate rainfall of each grid.
Blue indicates difference of CPC and GPCC larger than 300 mm/month

Mean monthly rainfall
GPCC 84.3 mm/month
CPC 74.4 mm/month
CPC is less than 8.2 % of GPCC .

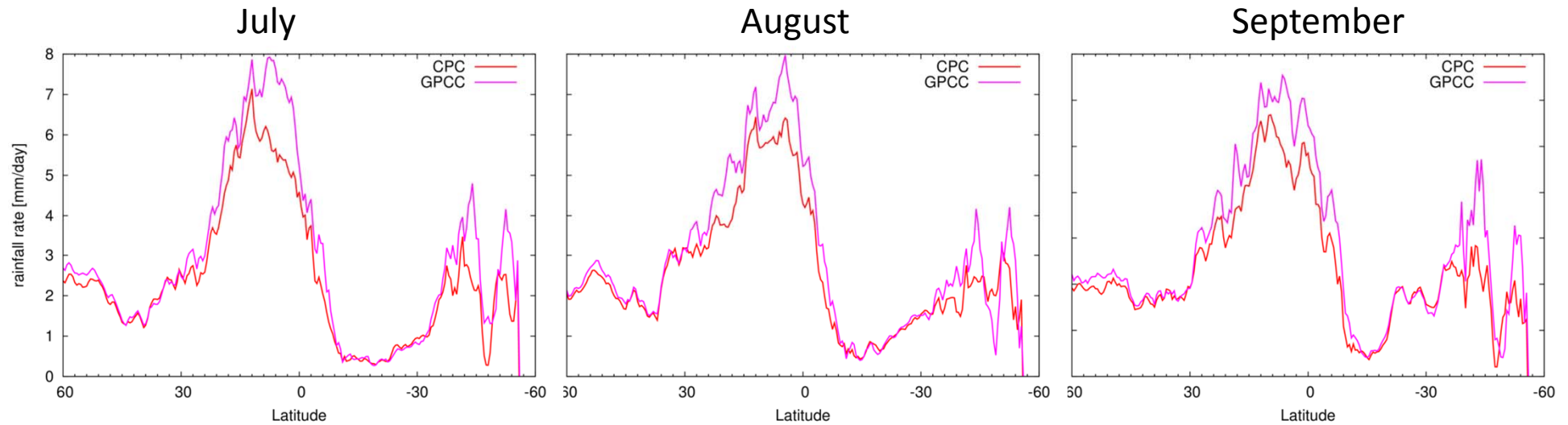
Number density of monthly precipitation



CPC precipitation is similar to GPCC precipitation in many grids (from yellow to red grids).

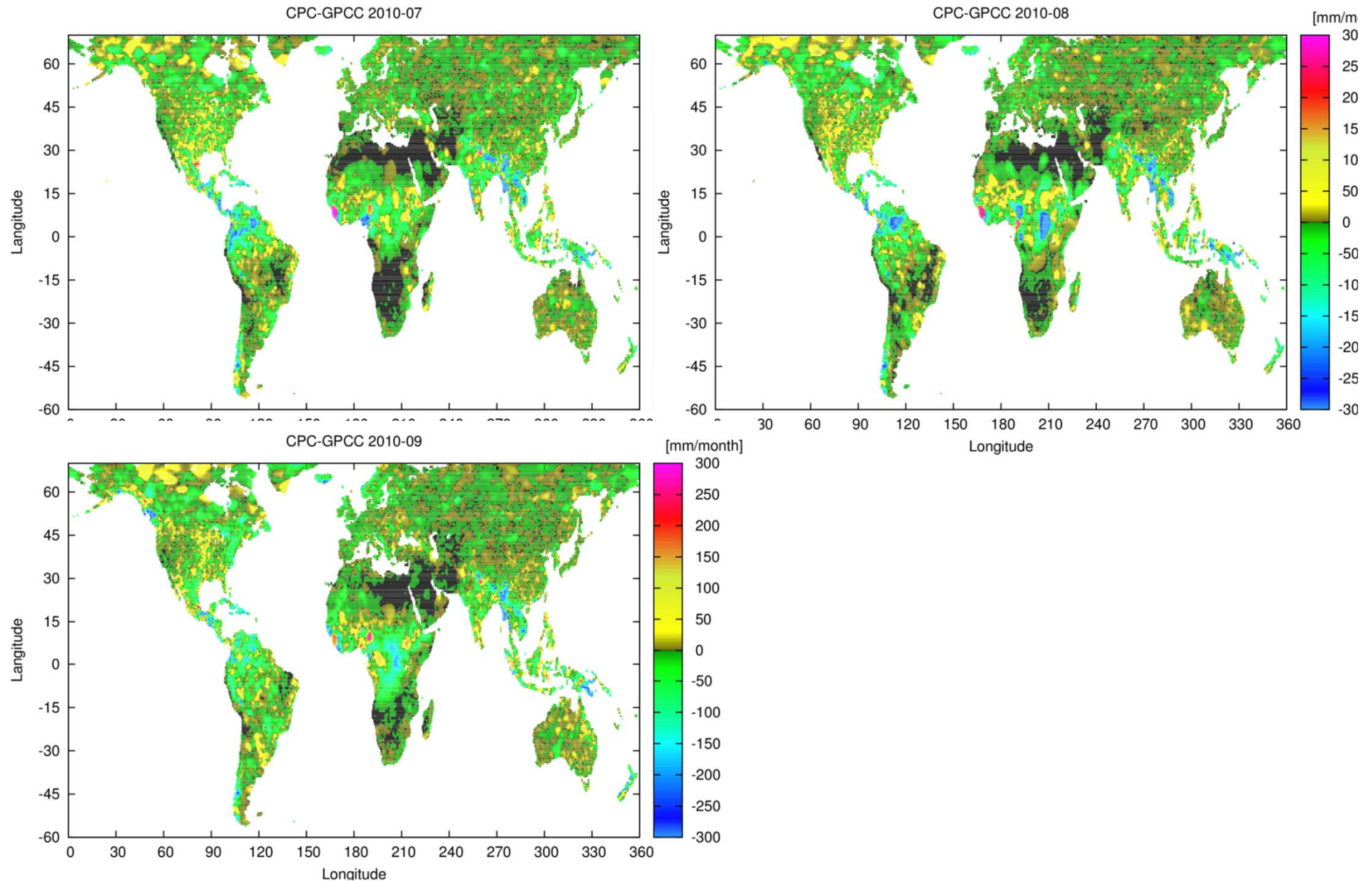
rainfall of GPCC are more than rainfall of CPC (from blue to black).

Zonal Mean precipitation of CPC and GPCC

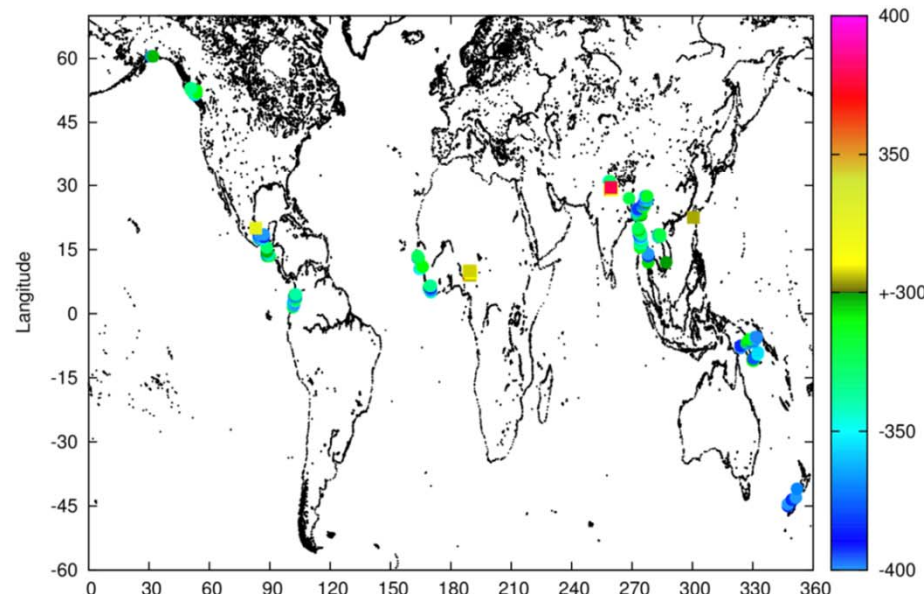
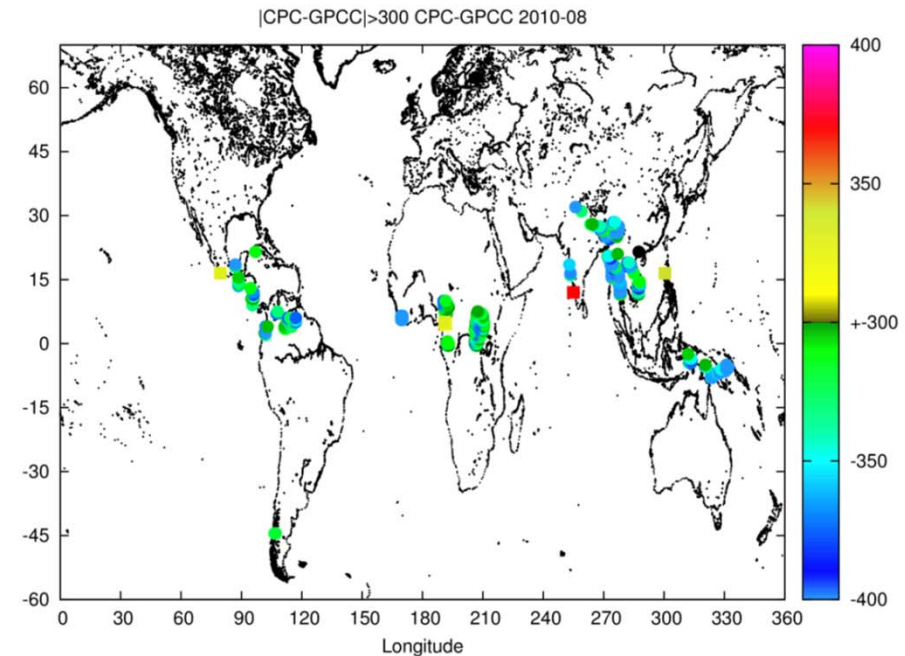
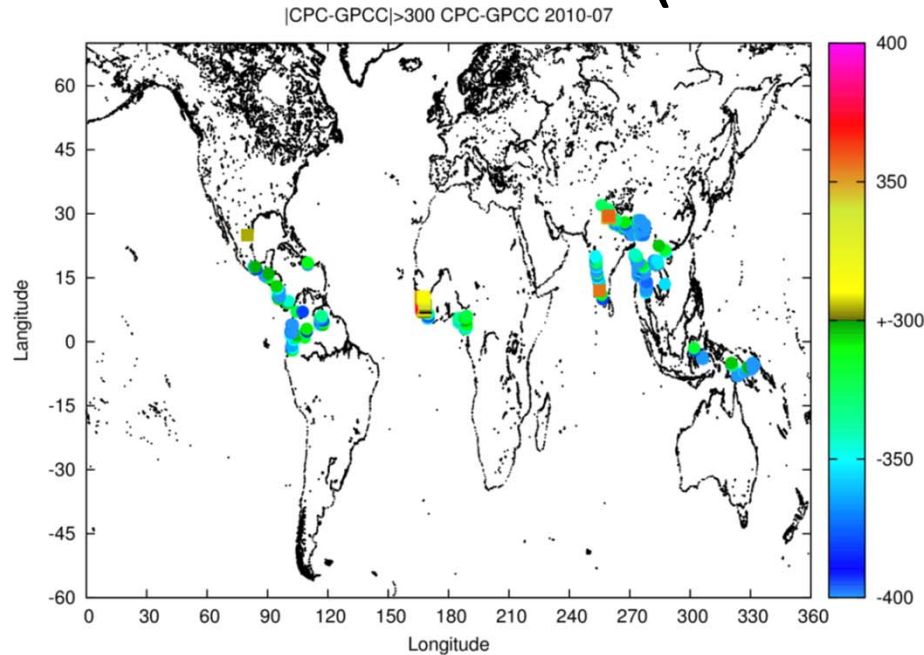


Zonal mean precipitation of CPC is almost lower than zonal mean precipitation of GPCP.

Difference of monthly precipitation between CPC and GPCC



Large difference of precipitation amount (>300mm/month)



equatorial region, south Asia and south east Asia

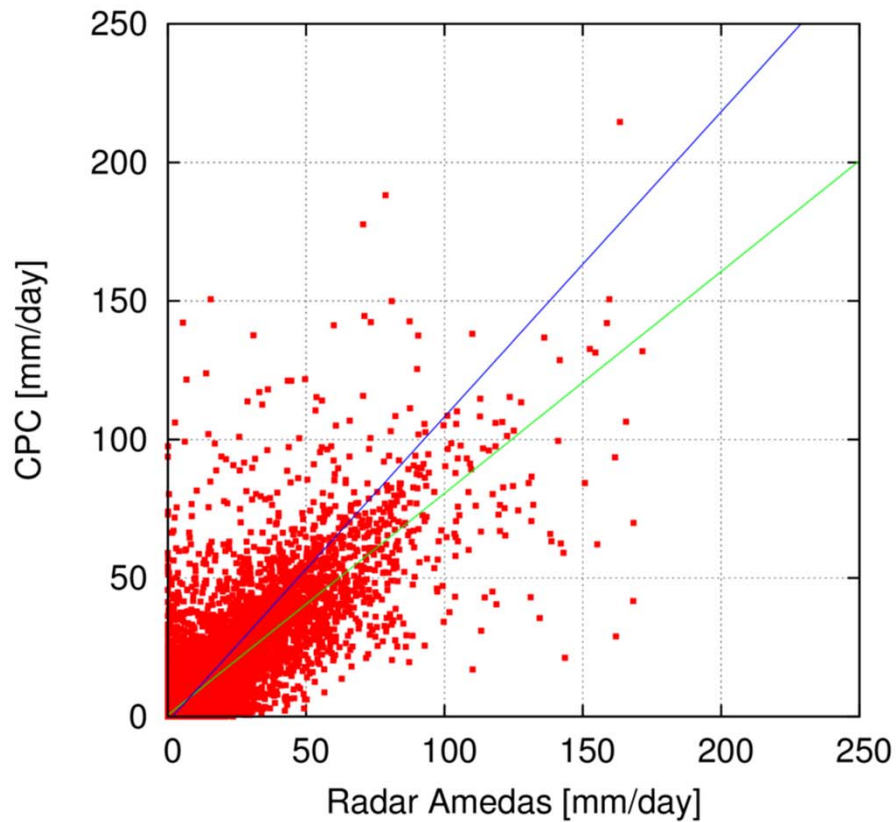
New Zealand north America in September.

Don't limit equatorial region and developing country.



Treatment of heavy precipitation can be different between CPC and GPCC.

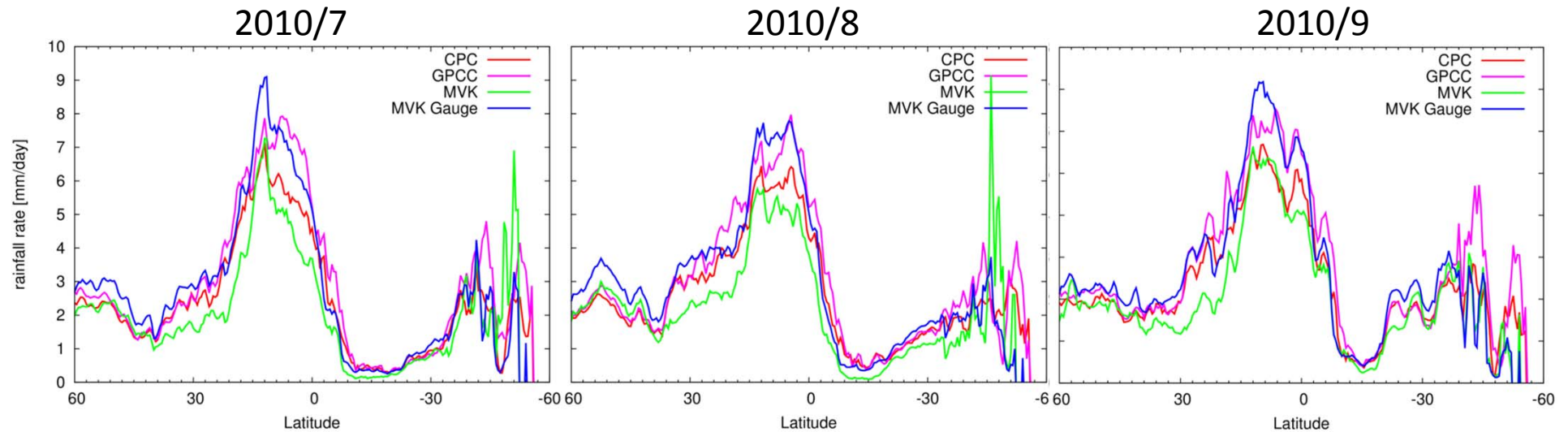
Scatter plot of daily rainfall Radar AMeDAS vs CPC



$$0.80 * x + 0.58$$
$$1.1 * x - 1.8$$

Rader AMeDAS is regridded
0.5 degree.

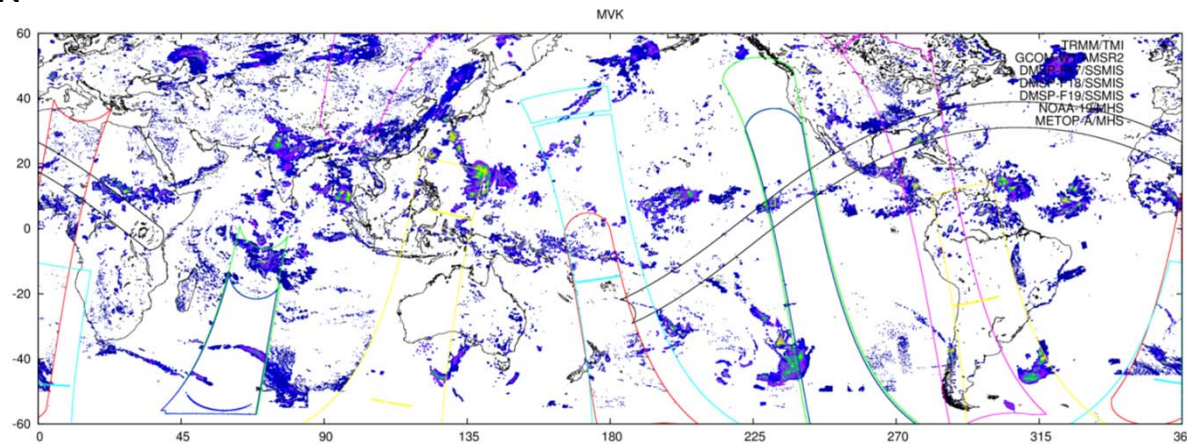
Zonal mean precipitation over land



GSMaP MVK → under estimation than CPC.

GSMaP Gauge → over estimation than CPC.

MVK

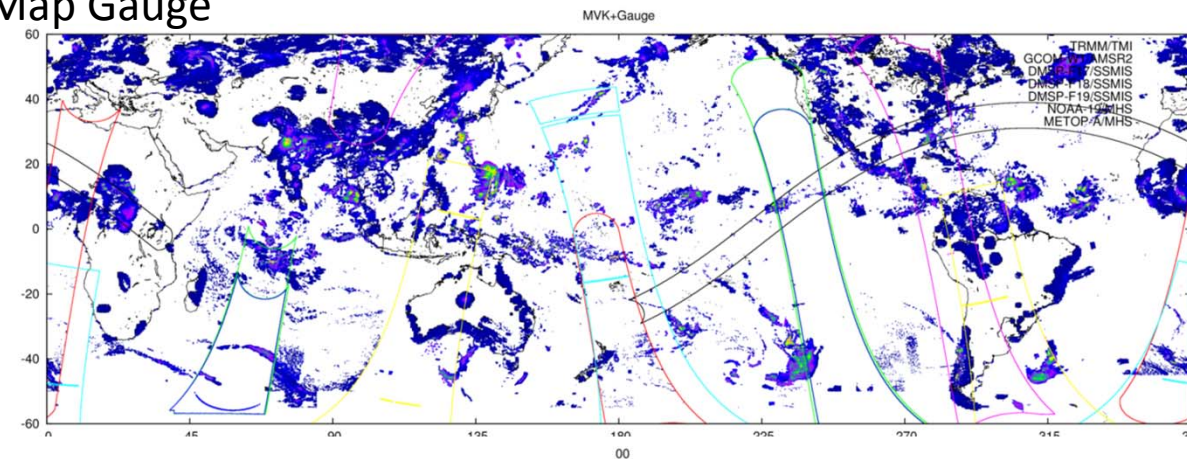


降水マップ

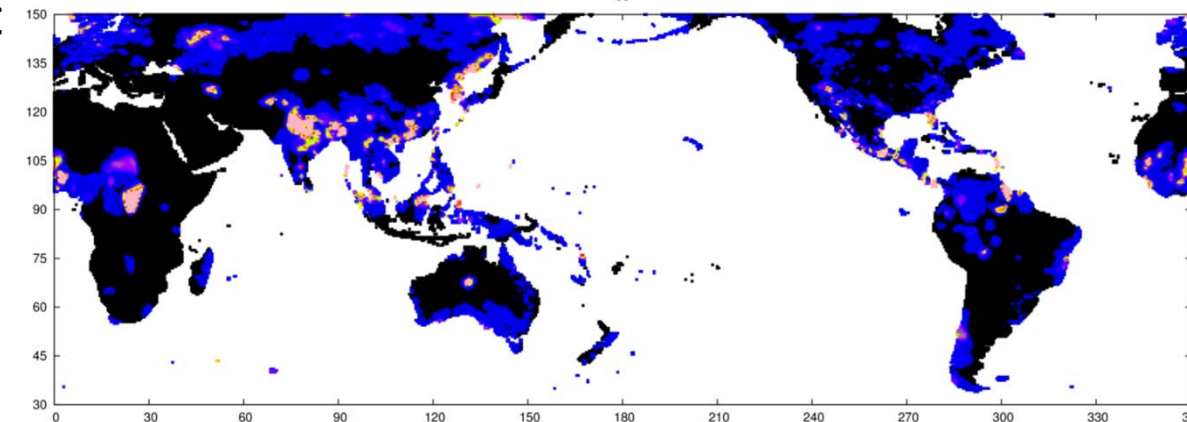
Change of
GSMap Gauge

1. Remove
scatted
precipitation
2. Precipitation
region is
fixed CPC
precipitation
region.
Precipitation
intensity
changed
ever hour.

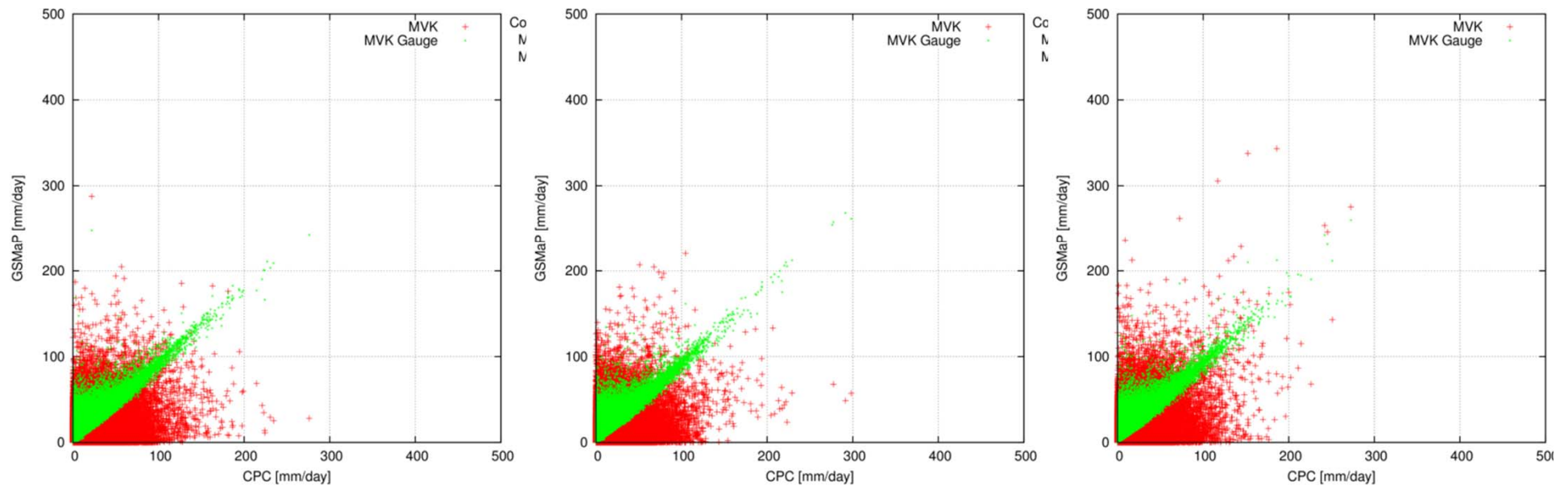
GSMap Gauge



CPC



GSMaP Gauge and MVK CPC

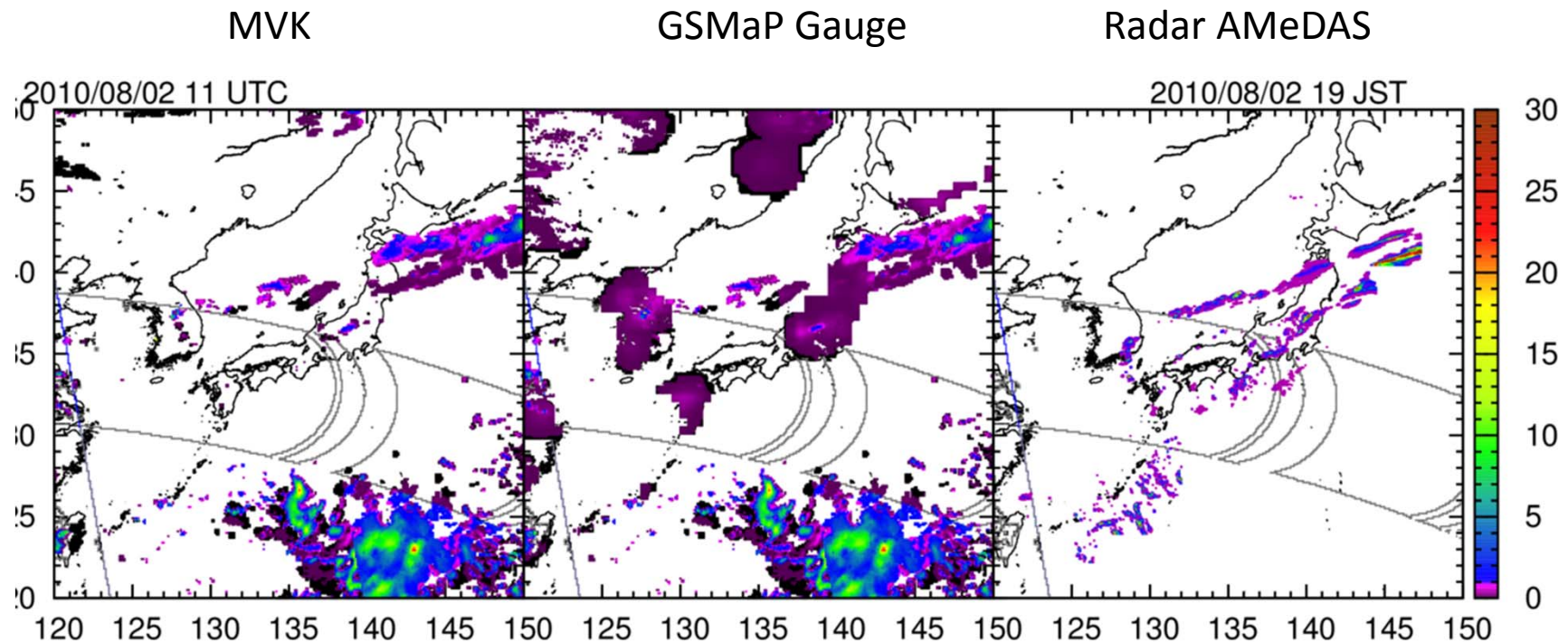


Red GSMaP MVK
Green GSMaP Gauge

Correlation coefficient

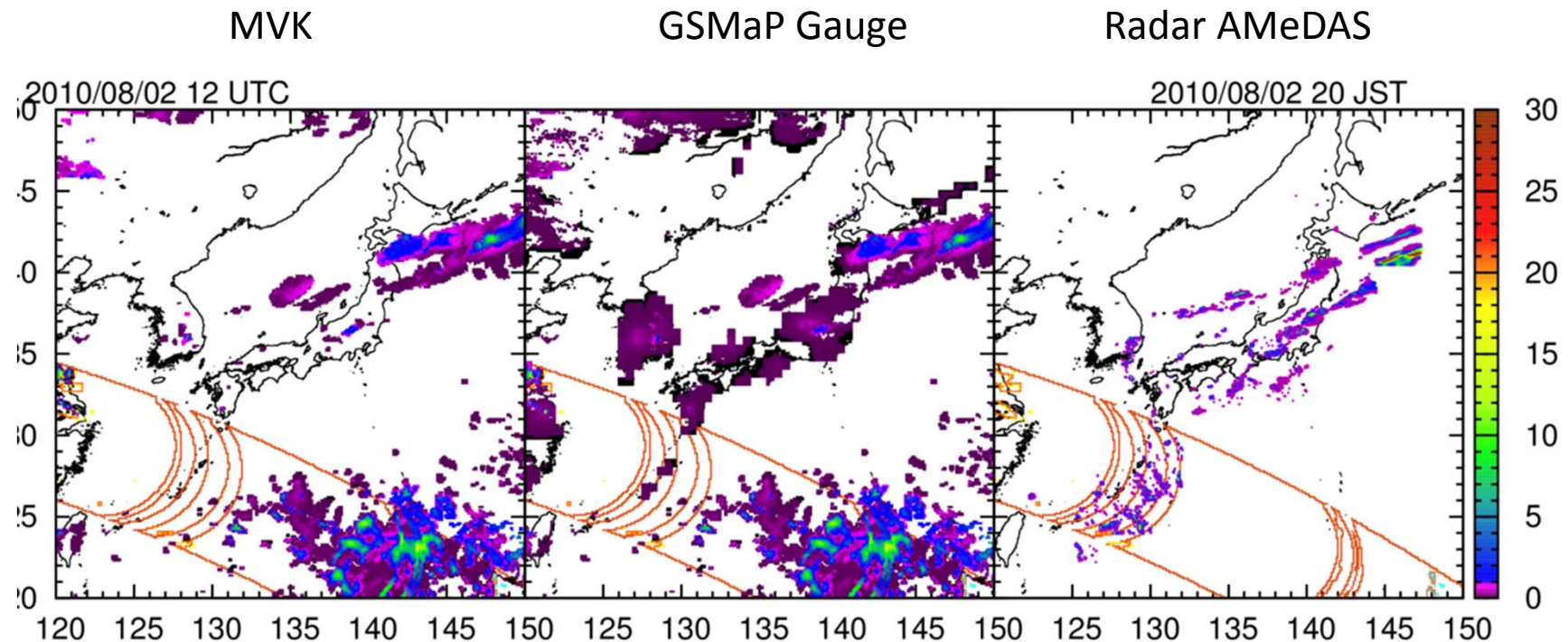
	GSMaP MVK	GSMaP Gauge
July	0.54	0.93
August	0.52	0.93
September	0.54	0.93

GSMaP and radar AMeDAS



Form of GSMaP Gauge estimated precipitation region is gridded.
change precipitation area is dramatically at 12UTC because gauge data is changed at the time.
Precipitation region is not change, However, precipitation intensity was change every hour.

GSMaPによる日本付近の推定降雨



Form of GSMaP Gauge estimated precipitation region is gridded.
change precipitation area is dramatically at 12UTC because gauge data is changed at the time.
Precipitation region is not change, However, precipitation intensity was change every hour.