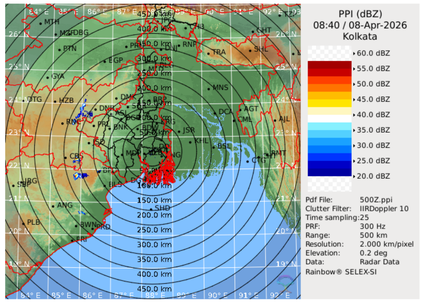
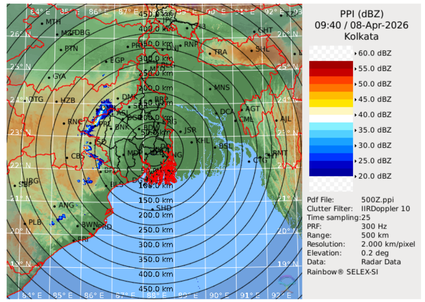
PPI Reflectivity (dBZ) — 08-09 April 2026 (Pre-monsoon)
72 scans over ~12 hours

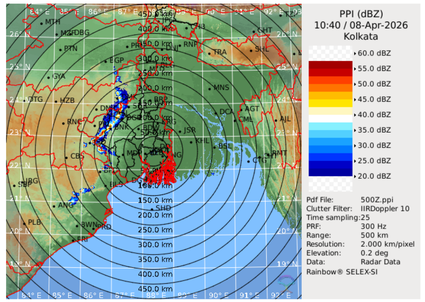
(1) 08 Apr 14:10 IST (08:40 UTC)



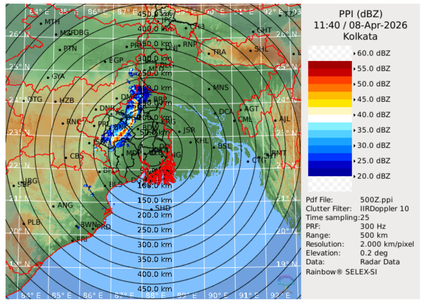
(2) 08 Apr 15:10 IST (09:40 UTC)



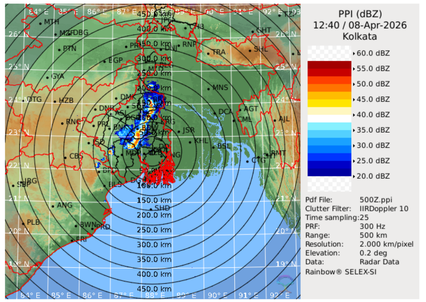
(3) 08 Apr 16:10 IST (10:40 UTC)



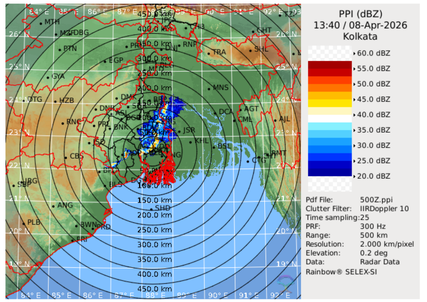
(4) 08 Apr 17:10 IST (11:40 UTC)



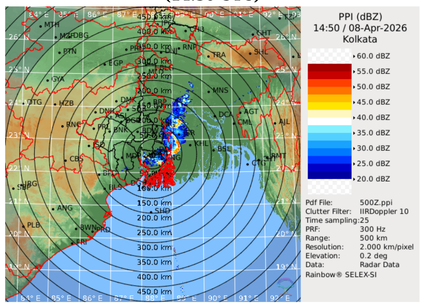
(5) 08 Apr 18:10 IST (12:40 UTC)



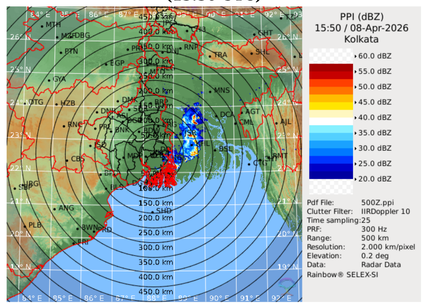
(6) 08 Apr 19:10 IST (13:40 UTC)



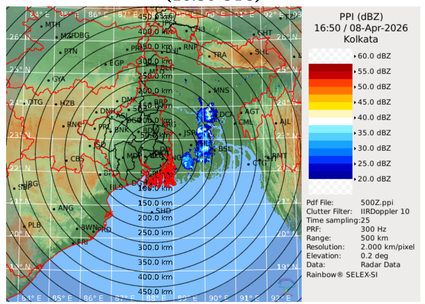
(7) 08 Apr 20:20 IST (14:50 UTC)



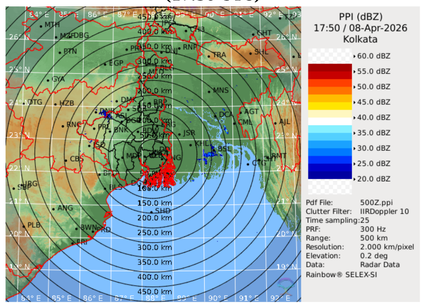
(8) 08 Apr 21:20 IST (15:50 UTC)



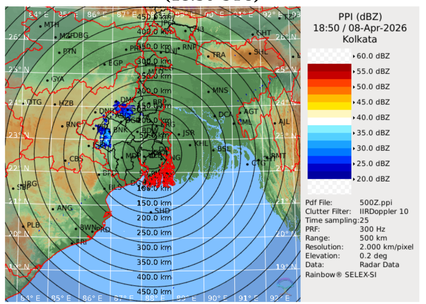
(9) 08 Apr 22:20 IST (16:50 UTC)



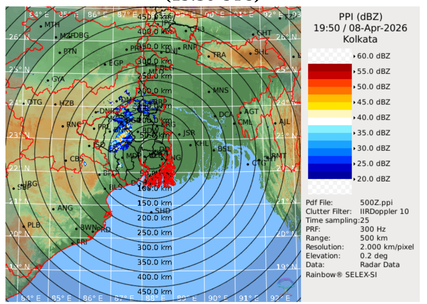
(10) 08 Apr 23:20 IST (17:50 UTC)



(11) 09 Apr 00:20 IST (18:50 UTC)

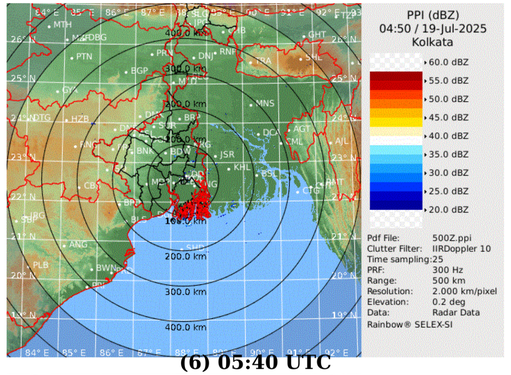


(12) 09 Apr 01:20 IST (19:50 UTC)

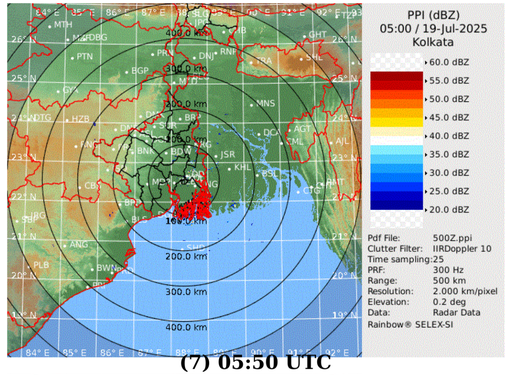


PPI Reflectivity (dBZ) — 19 July 2025 (Monsoon)

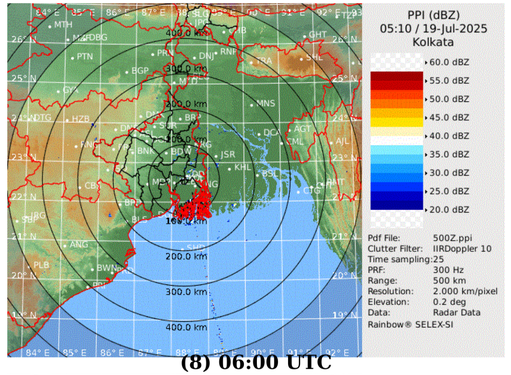
(1) 04:50 UTC



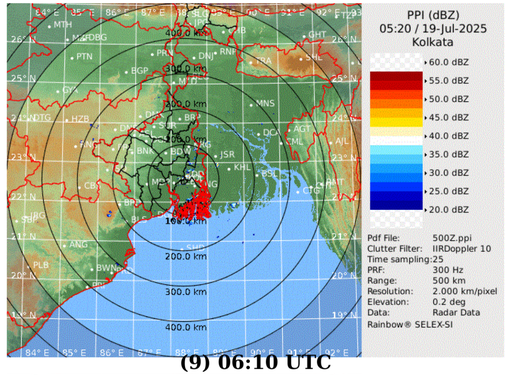
(2) 05:00 UTC



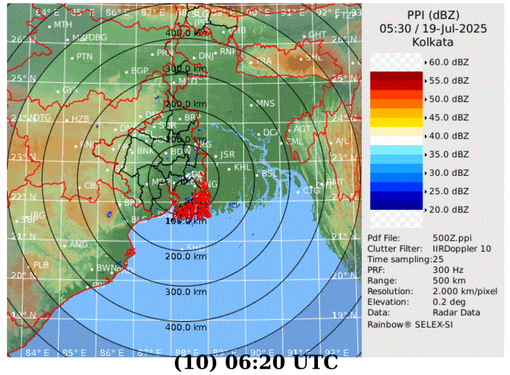
(3) 05:10 UTC



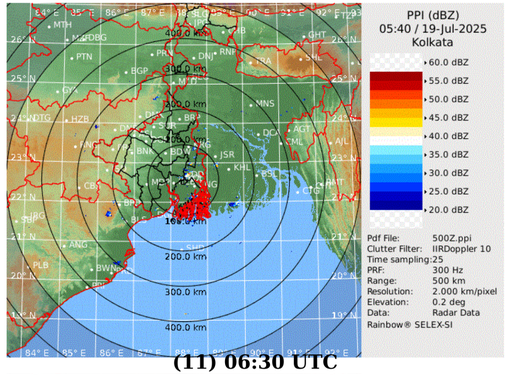
(4) 05:20 UTC



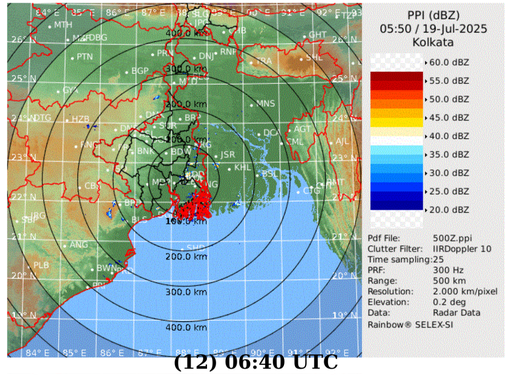
(5) 05:30 UTC



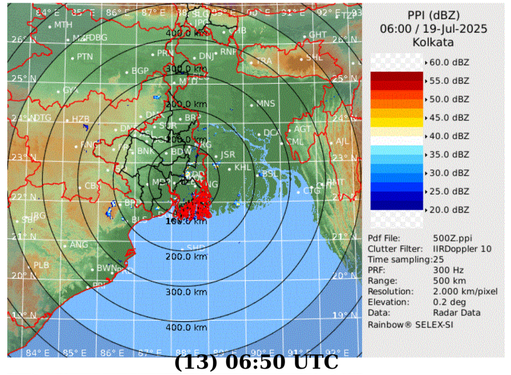
(6) 05:40 UTC



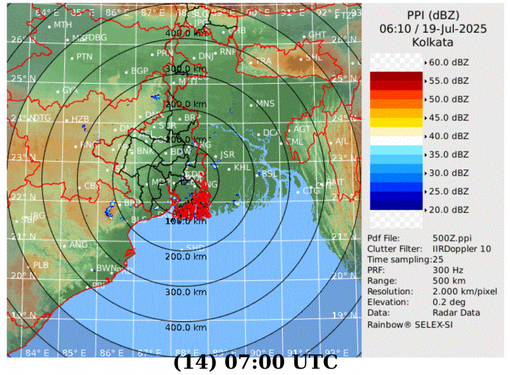
(7) 05:50 UTC



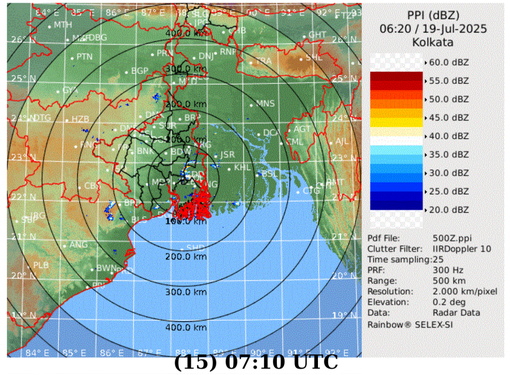
(8) 06:00 UTC



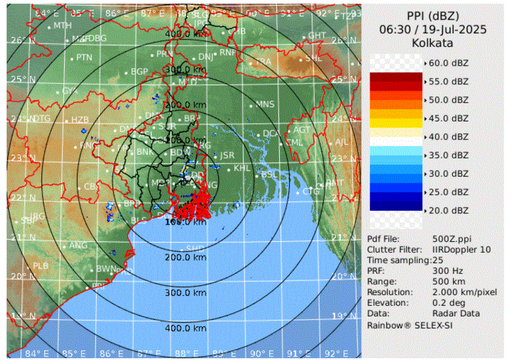
(9) 06:10 UTC



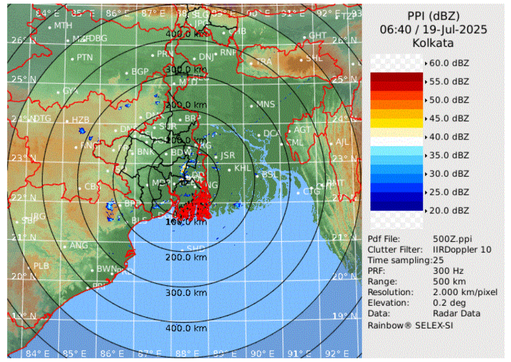
(10) 06:20 UTC



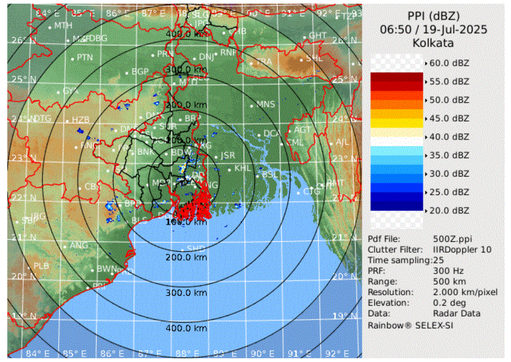
(11) 06:30 UTC



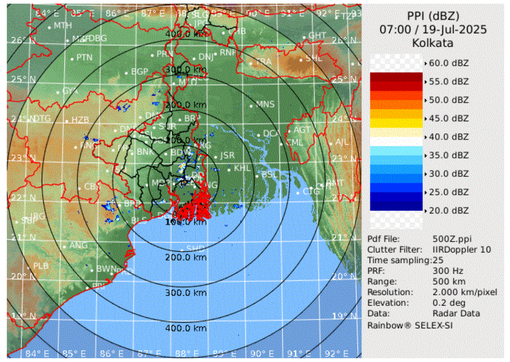
(12) 06:40 UTC



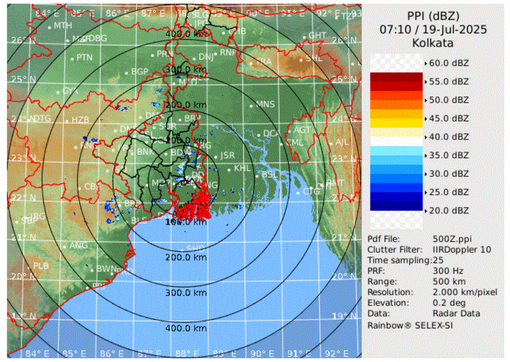
(13) 06:50 UTC



(14) 07:00 UTC

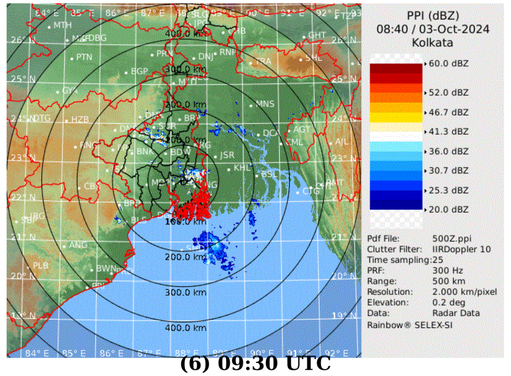


(15) 07:10 UTC

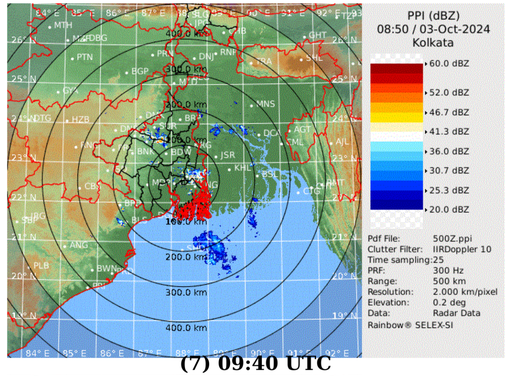


PPI Reflectivity (dBZ) – 03 October 2024 (Post-monsoon)

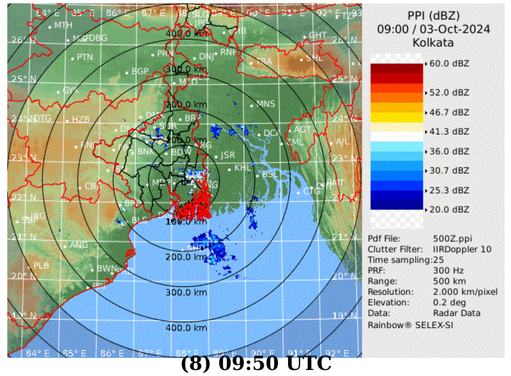
(1) 08:40 UTC



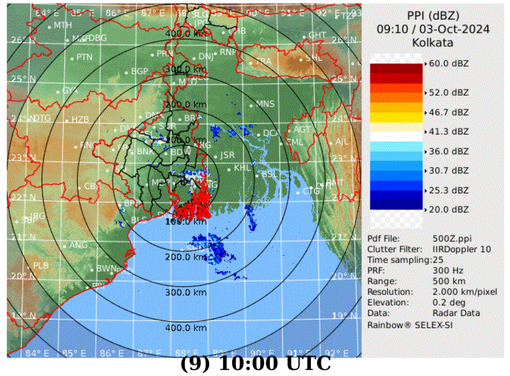
(2) 08:50 UTC



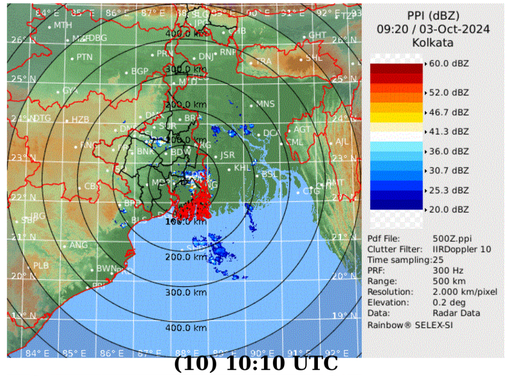
(3) 09:00 UTC



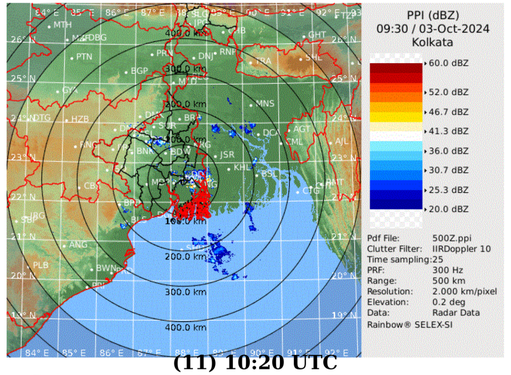
(4) 09:10 UTC



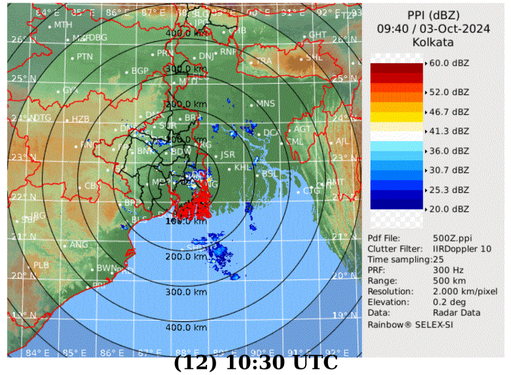
(5) 09:20 UTC



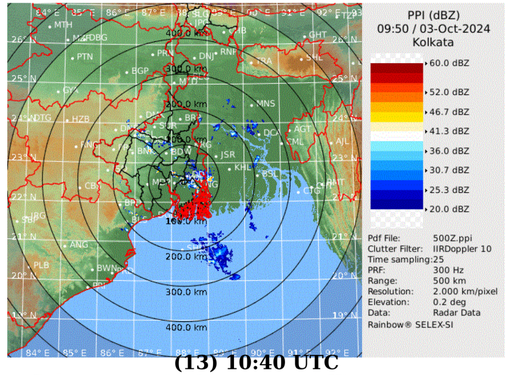
(6) 09:30 UTC



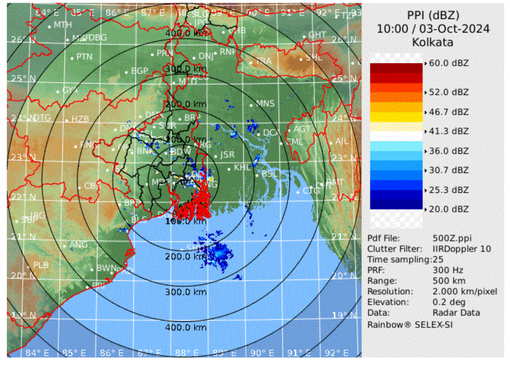
(7) 09:40 UTC



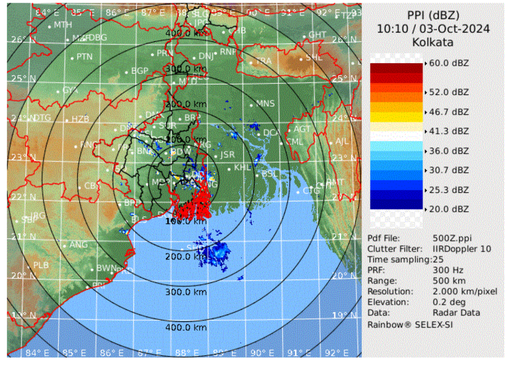
(8) 09:50 UTC



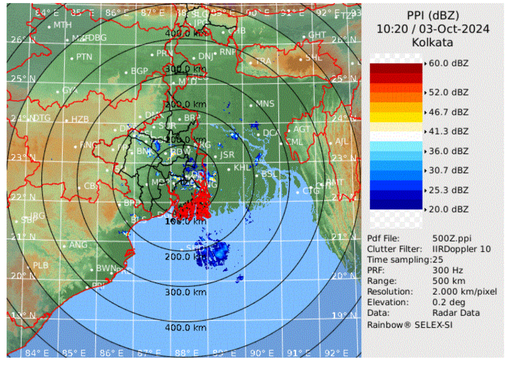
(9) 10:00 UTC



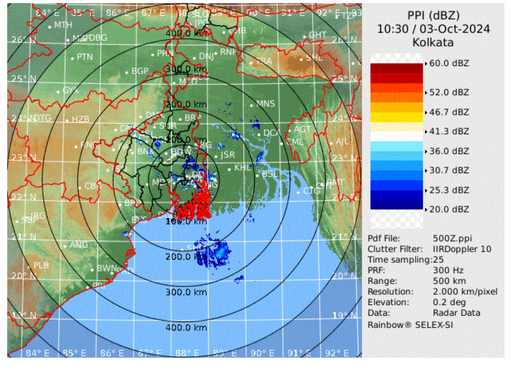
(10) 10:10 UTC



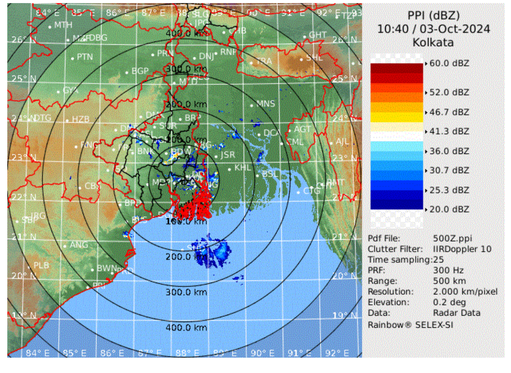
(11) 10:20 UTC



(12) 10:30 UTC

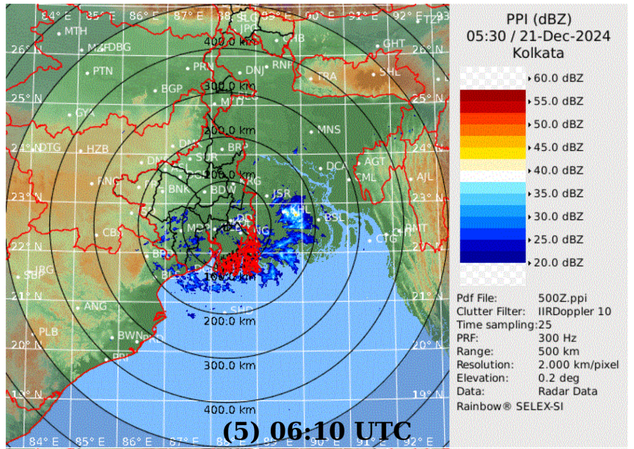


(13) 10:40 UTC

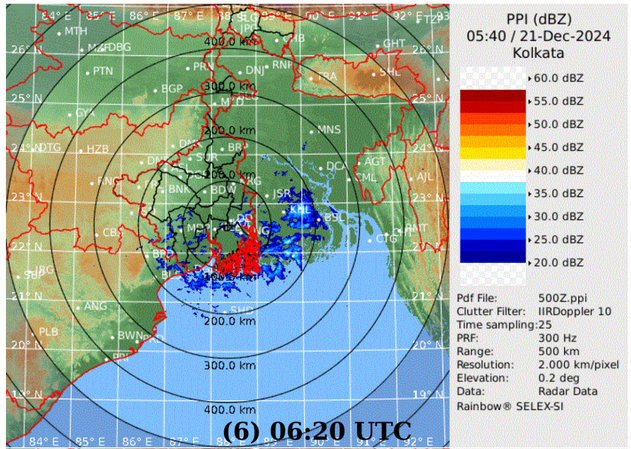


PPI Reflectivity (dBZ) — 21 December 2024 (Winter)

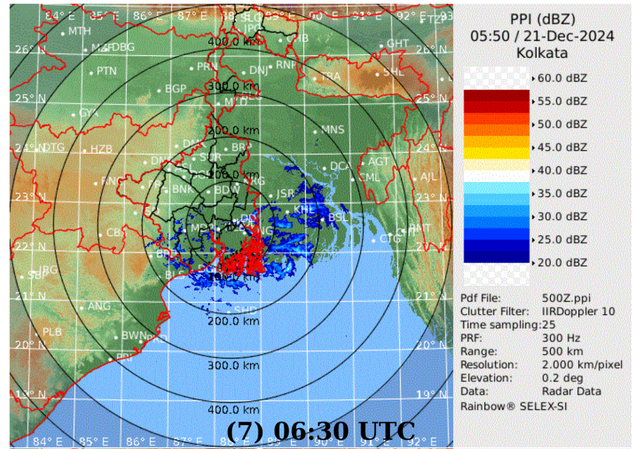
(1) 05:30 UTC



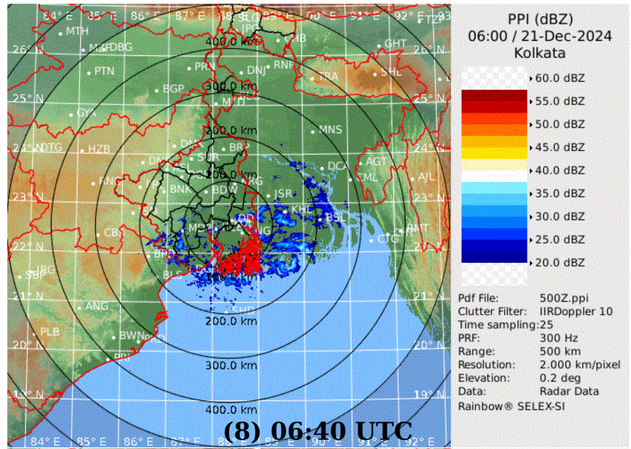
(2) 05:40 UTC



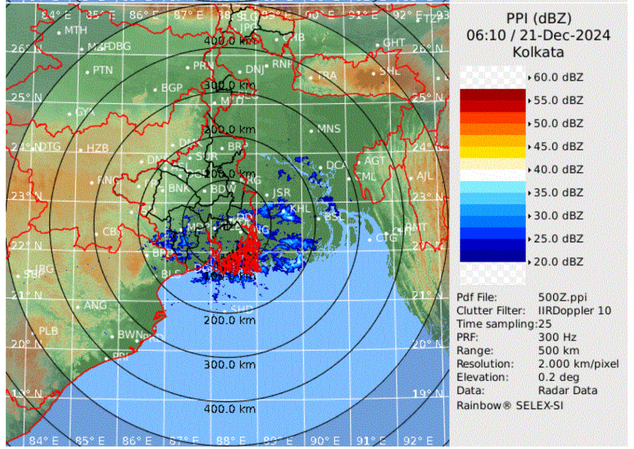
(3) 05:50 UTC



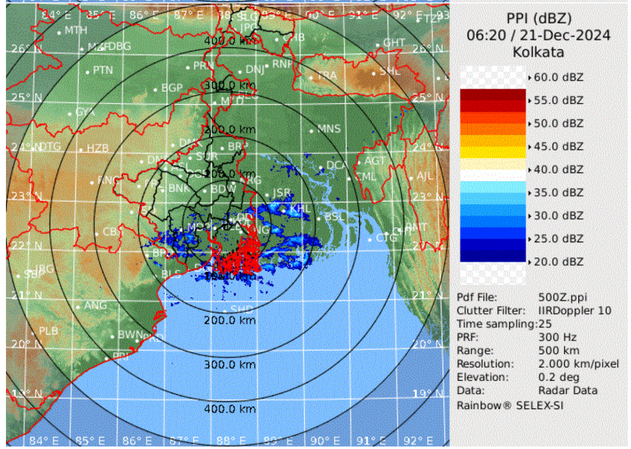
(4) 06:00 UTC



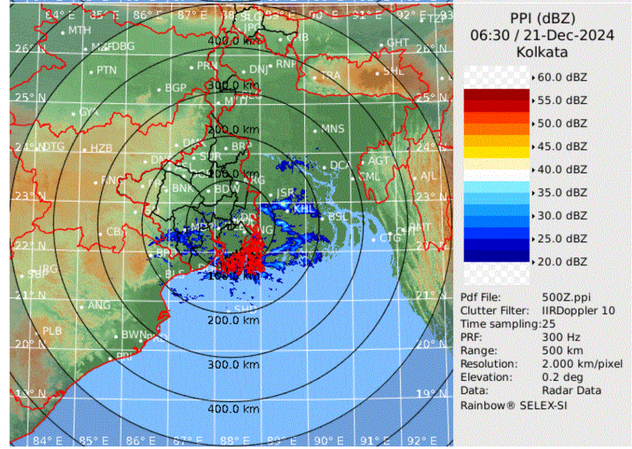
(5) 06:10 UTC



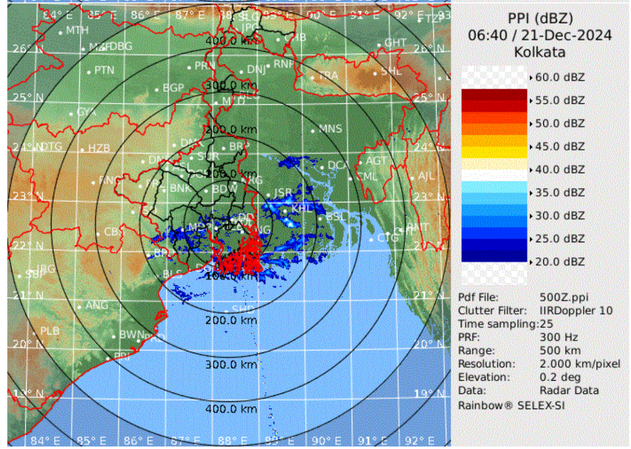
(6) 06:20 UTC



(7) 06:30 UTC

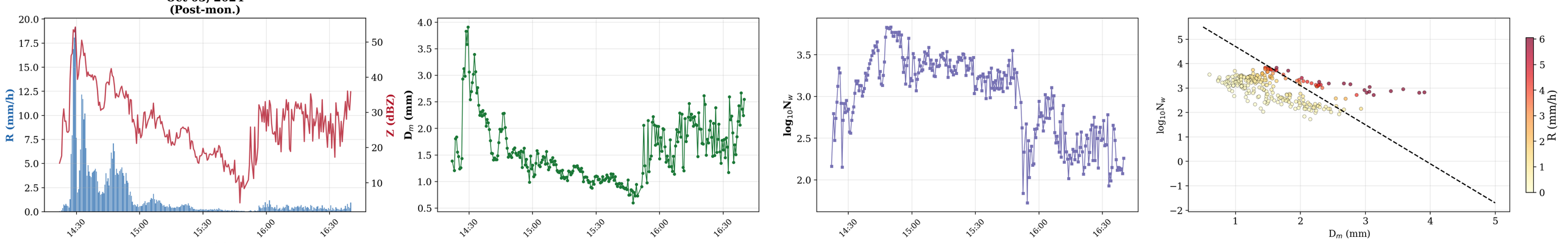


(8) 06:40 UTC

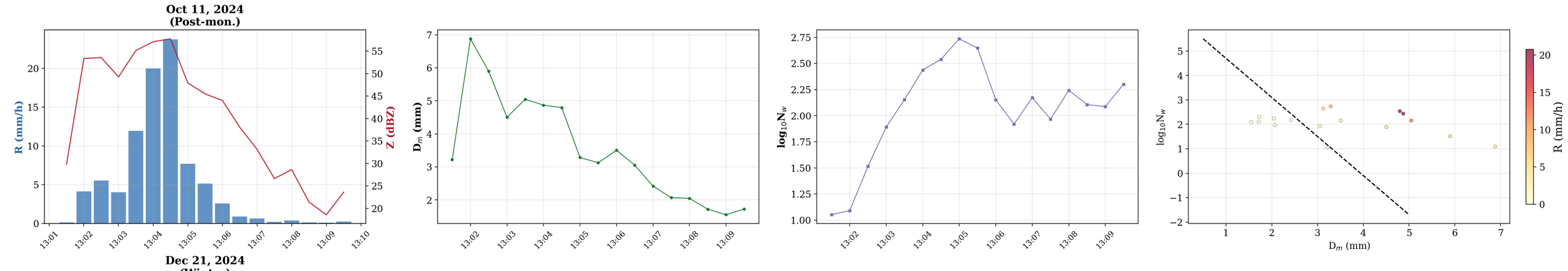


DSD Parameter Evolution — 9 Events

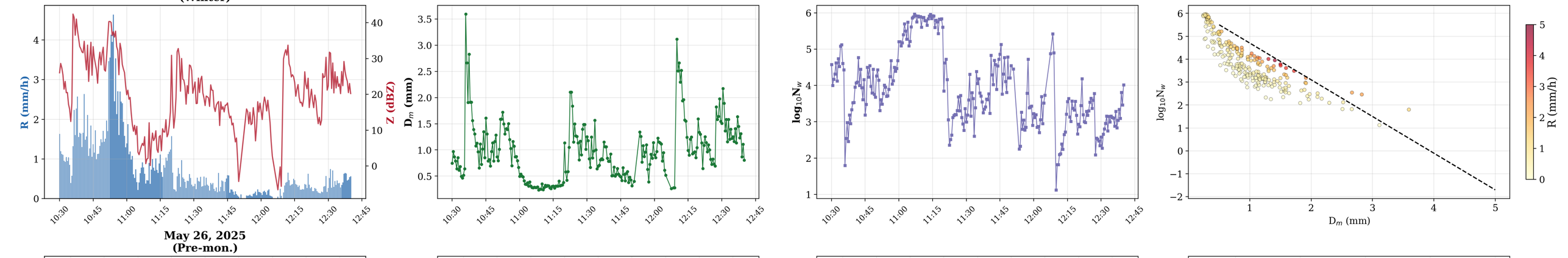
Oct 03, 2024 (Post-mon.)



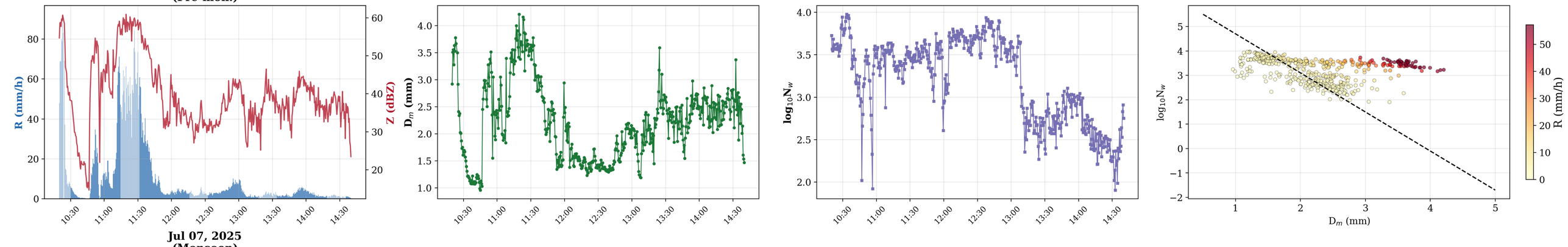
Oct 11, 2024 (Post-mon.)



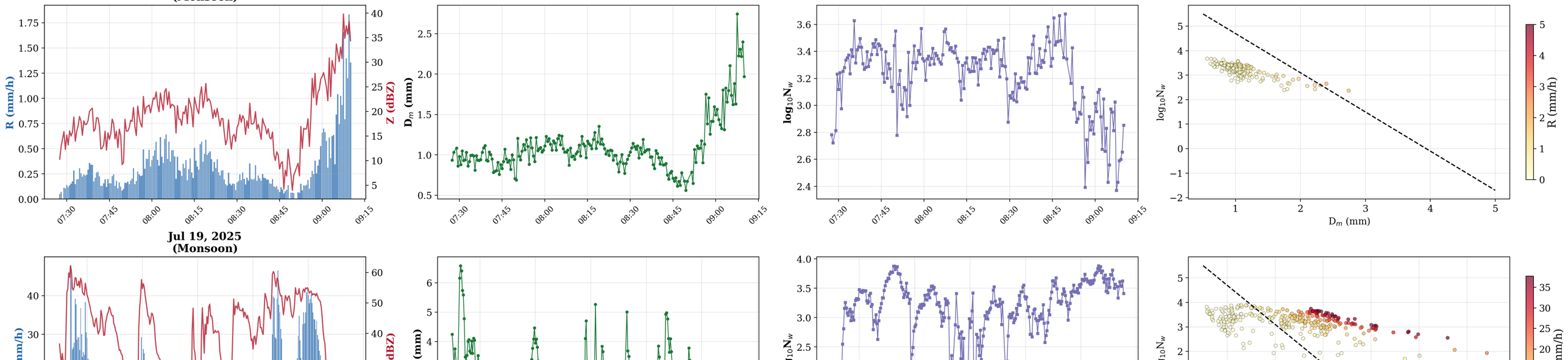
Dec 21, 2024 (Winter)



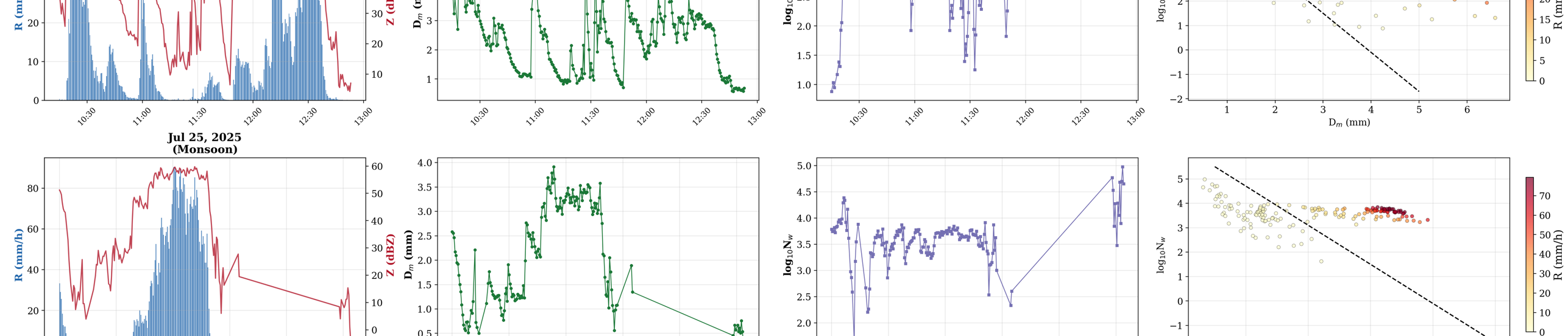
May 26, 2025 (Pre-mon.)



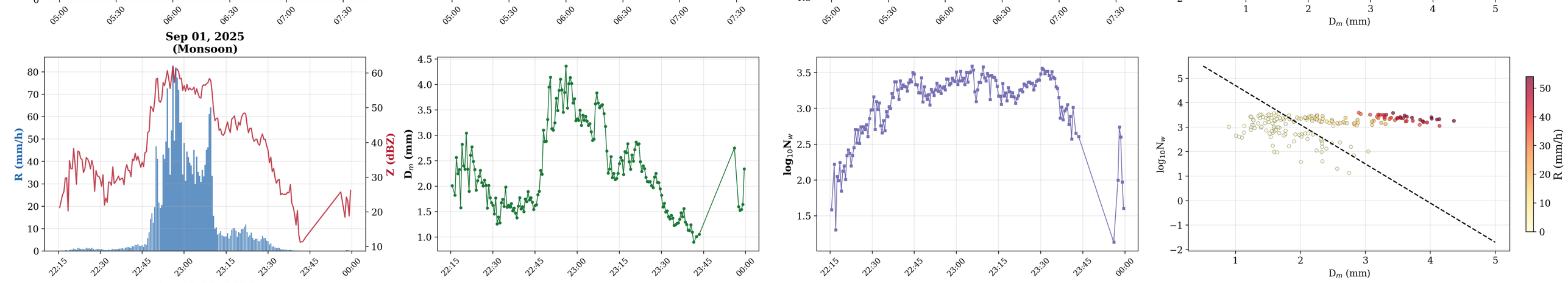
Jul 07, 2025 (Monsoon)



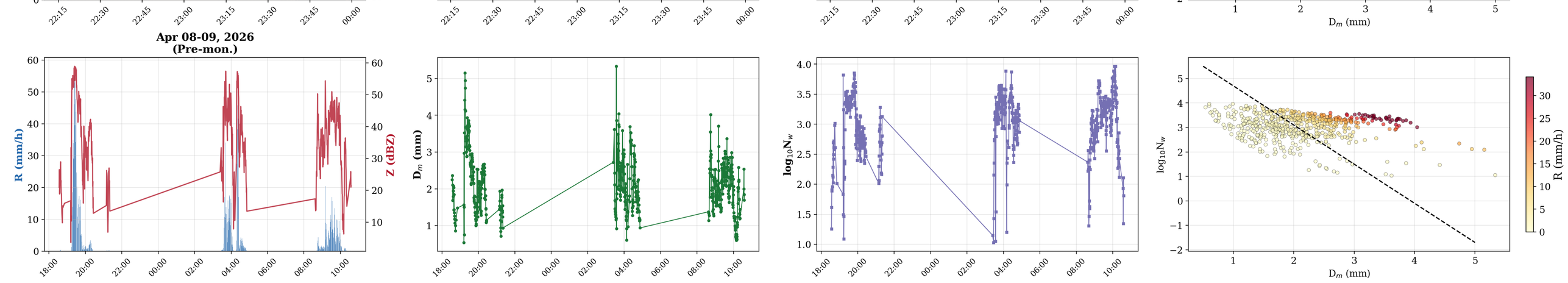
Jul 19, 2025 (Monsoon)



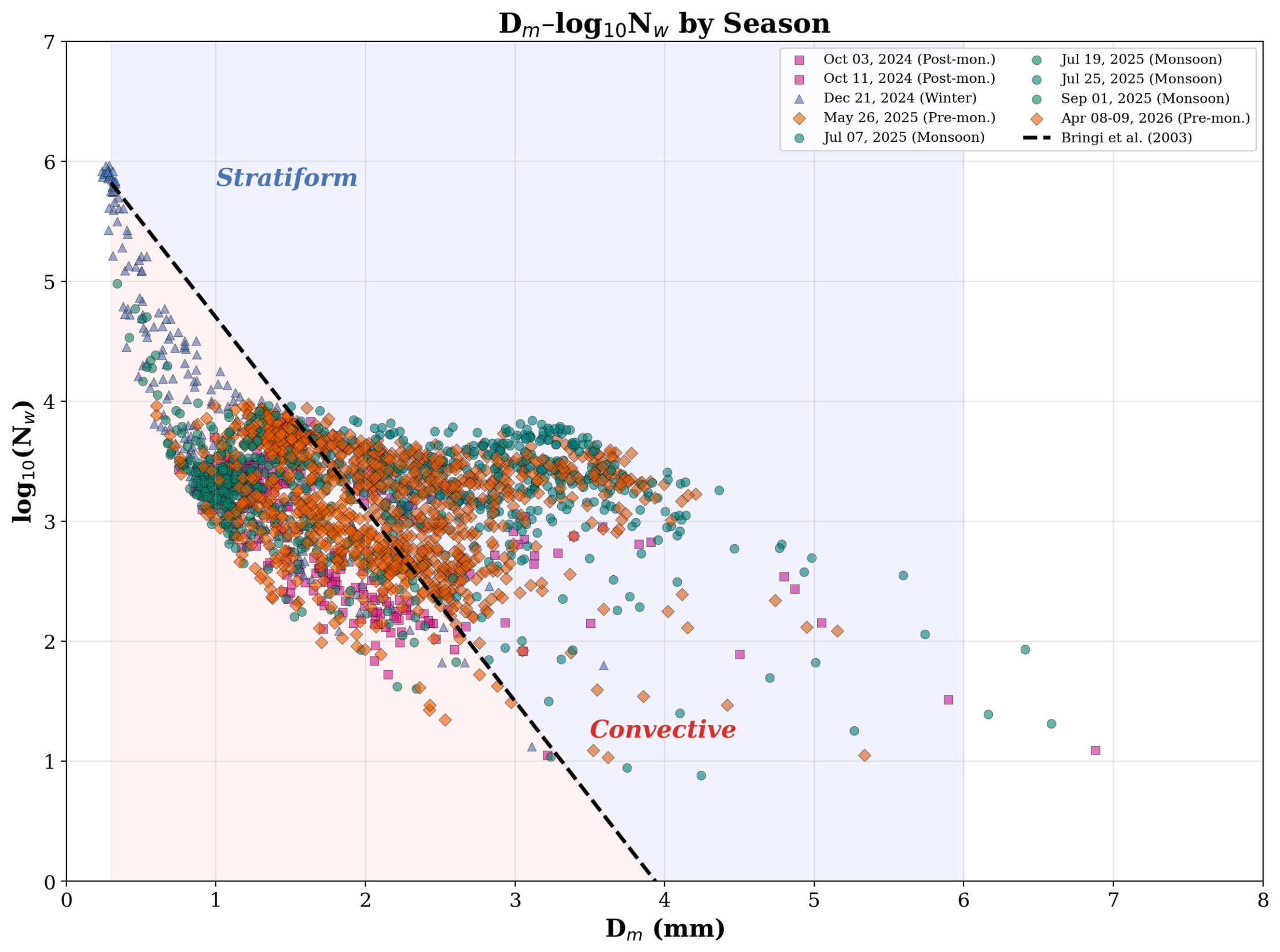
Jul 25, 2025 (Monsoon)

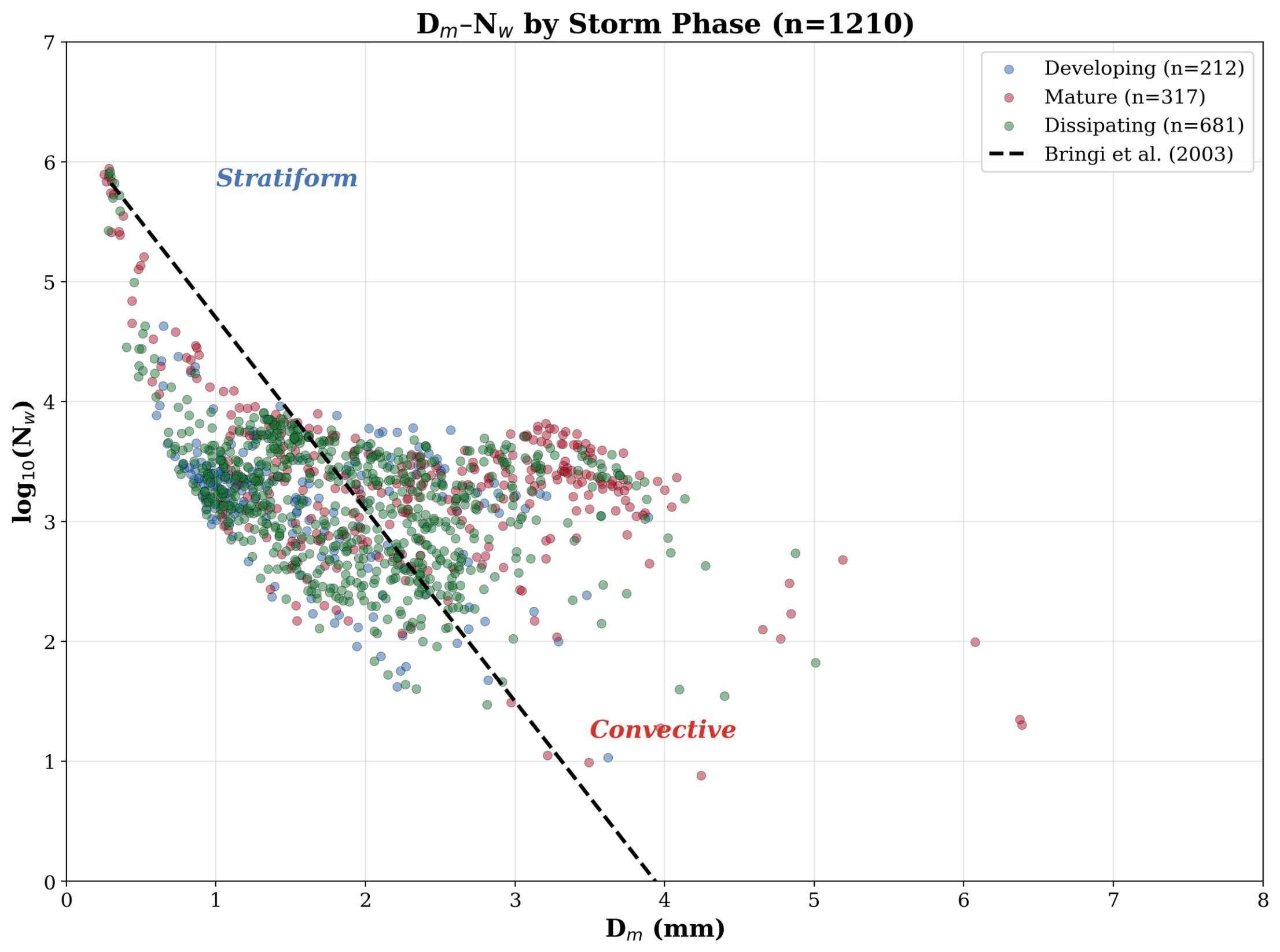


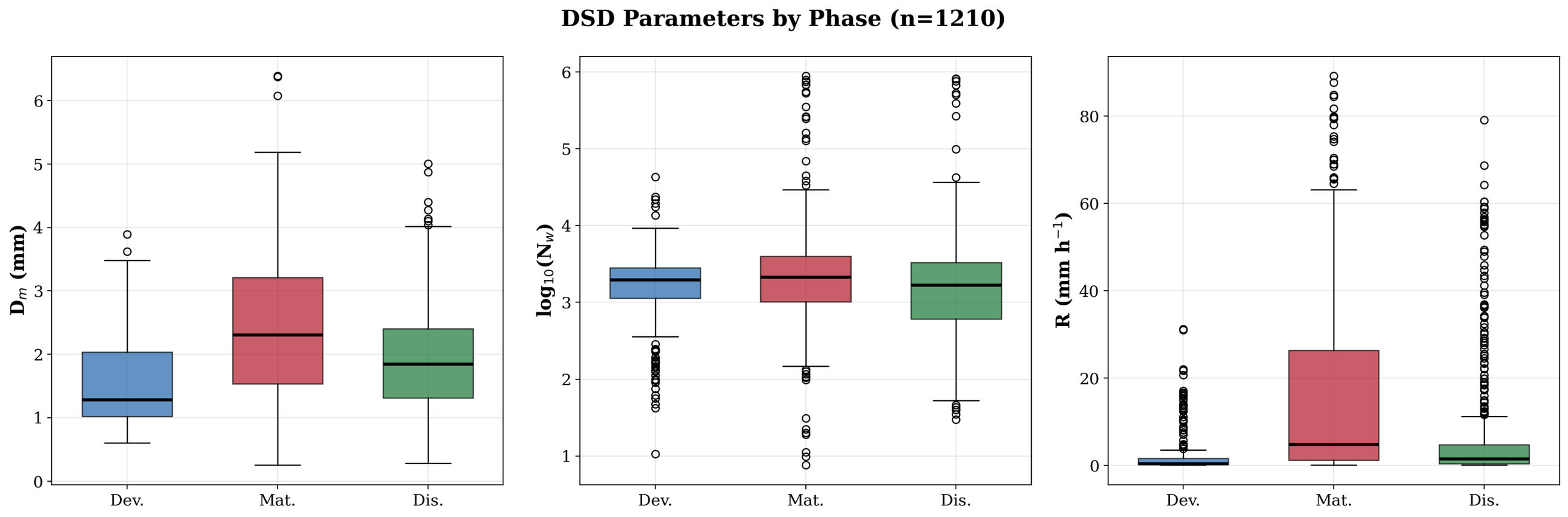
Sep 01, 2025 (Monsoon)

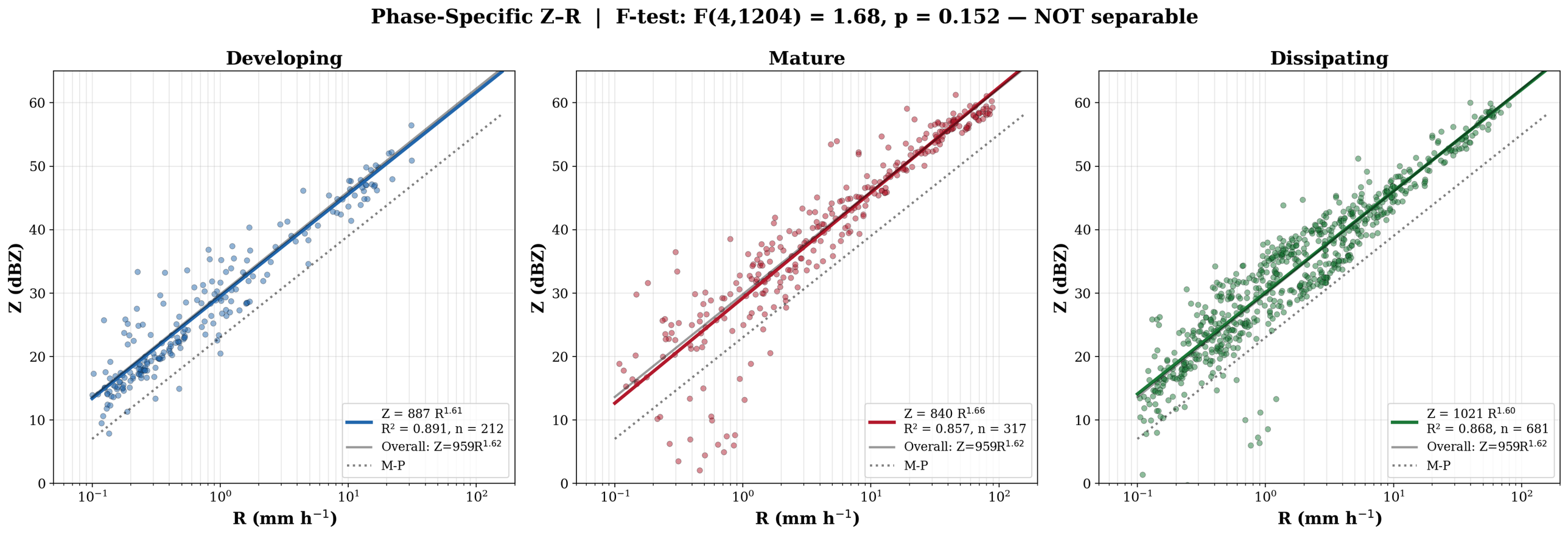


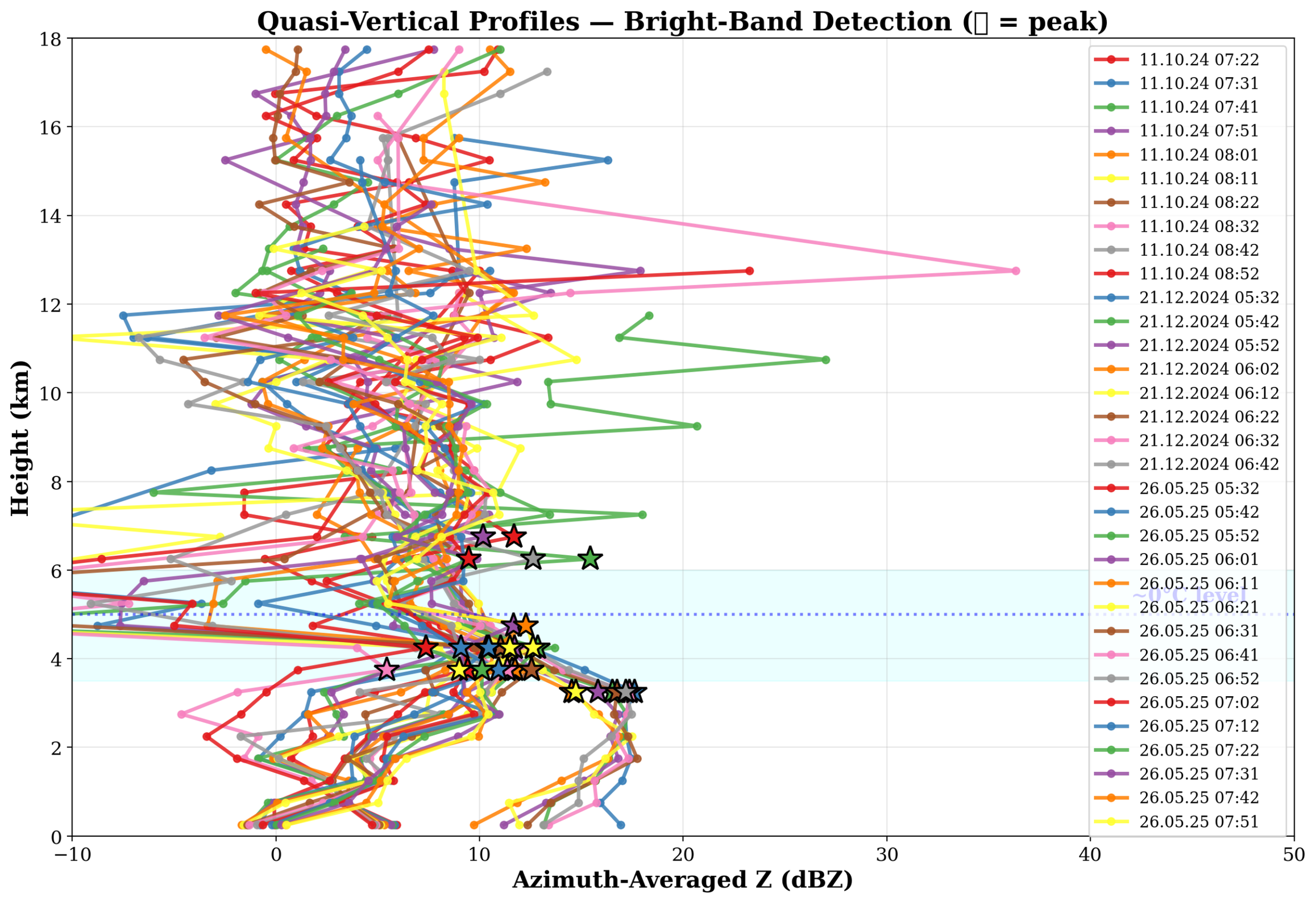
Apr 08-09, 2026 (Pre-mon.)


D_m–$\log_{10}N_w$ by Season
Oct 03, 2024 (Post-mon.)
Oct 11, 2024 (Post-mon.)
Dec 21, 2024 (Winter)
May 26, 2025 (Pre-mon.)
Jul 07, 2025 (Monsoon)
Jul 19, 2025 (Monsoon)
Jul 25, 2025 (Monsoon)
Sep 01, 2025 (Monsoon)
Apr 08-09, 2026 (Pre-mon.)
Bringi et al. (2003)
Stratiform
Convective
$\log_{10}(N_w)$
D_m (mm)
0
1
2
3
4
5
6
7
8


D$_m$–N$_w$ by Storm Phase (n=1210)
Developing (n=212)
Mature (n=317)
Dissipating (n=681)
Bringi et al. (2003)
Stratiform
Convective
log$_{10}$(N$_w$)
D$_m$ (mm)
0
1
2
3
4
5
6
7
8


DSD Parameters by Phase (n=1210)
D_m (mm)
$\log_{10}(N_w)$
R (mm h^{-1})
Dev.
Mat.
Dis.


Phase-Specific Z–R | F-test: F(4,1204) = 1.68, p = 0.152 — NOT separable
Developing
Mature
Dissipating
Z (dBZ)
R (mm h⁻¹)
Z = 887 R^1.61
R² = 0.891, n = 212
Overall: Z=959R^1.62
M-P
Z = 840 R^1.66
R² = 0.857, n = 317
Overall: Z=959R^1.62
M-P
Z = 1021 R^1.60
R² = 0.868, n = 681
Overall: Z=959R^1.62
M-P


Quasi-Vertical Profiles — Bright-Band Detection (= peak)
Height (km)
Azimuth-Averaged Z (dBZ)
~0°C level
11.10.24 07:22
11.10.24 07:31
11.10.24 07:41
11.10.24 07:51
11.10.24 08:01
11.10.24 08:11
11.10.24 08:22
11.10.24 08:32
11.10.24 08:42
11.10.24 08:52
21.12.2024 05:32
21.12.2024 05:42
21.12.2024 05:52
21.12.2024 06:02
21.12.2024 06:12
21.12.2024 06:22
21.12.2024 06:32
21.12.2024 06:42
26.05.25 05:32
26.05.25 05:42
26.05.25 05:52
26.05.25 06:01
26.05.25 06:11
26.05.25 06:21
26.05.25 06:31
26.05.25 06:41
26.05.25 06:52
26.05.25 07:02
26.05.25 07:12
26.05.25 07:22
26.05.25 07:31
26.05.25 07:42
26.05.25 07:51

QPE Demonstration at Kolkata (22.53°N, 88.33°E)
Calibration: +10 dBZ | Observed: 4.8 mm

