Centre de Recerca Aplicada en Hidrometeorologia
UNIVERSITAT POLITÈCNICA DE CATALUNYA

Millores i evolució del programari EHIMI per l'any 2025

Annex I
Resultats de l'anàlisi de factors de calibració - comparació Radar-Pluviòmetres

Barcelona, desembre de 2025
Informe CRAHI-INF-2025-02-01

Resultats de l'anàlisi de factors de calibració. Comparació Radar-Pluviòmetres

A continuació es mostren els resultats de l'anàlisi dels factors de calibració de la XRAD. Per cada radar, i pels 14 episodis analitzats, es mostra la regressió lineal que permet obtenir el factor de calibració. Al costat es mostra el mateix gràfic de dispersió un cop aplicat el factor de calibració de l'episodi (teòric) sobre la pluja radar (en aquest cas, el pendent de la recta de regressió és 1).

Junt amb el gràfic de dispersió, es mostren els camps de pluja de les acumulacions de l'episodi, per poder comparar la interpolació de pluviòmetres amb el camps de pluja radar. Per tal de fer més coherent la comparació, també s'inclou el camp de pluja obtingut per interpolació de les estimacions radar als punts dels pluviòmetres (s'empren tots els pluviòmetres no descartats prèviament, tant dins com fora de l'abast de càlcul). Finalment, s'inclou el mateix camp de pluja acumulada radar un cop aplicat el factor de calibració obtingut per l'episodi sobre la pluja radar (igualment s'inclou la interpolació).

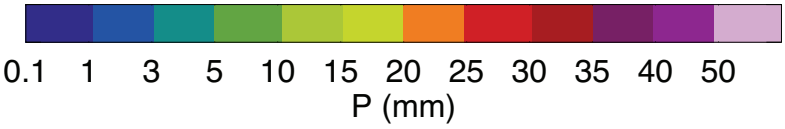
Els episodis analitzats es mostren a la Taula 1.

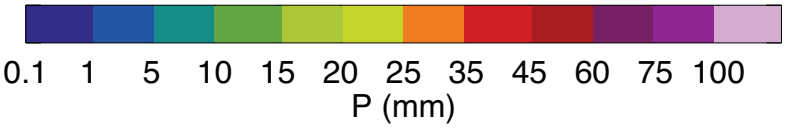
Taula 1. Episodis emprats per l'anàlisi del factor de calibració. Pmax és la pluja màxima aconseguida de l'episodi en algun pluviòmetre de la xarxa.

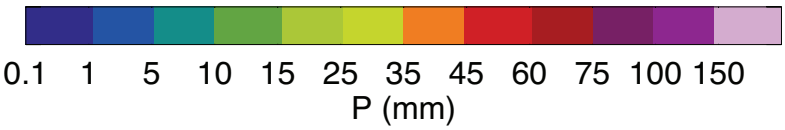
Episodi	Nombre de dies	Pmax [mm] / estació
20250207 – 20250208	2	64.6 / XS
20250212 – 20250212	1	34.5 / UG
20250222 – 20250222	1	27.5 / U3
20250306 – 20250309	4	131.5 / DN
20250311 – 20250314	4	61.8 / Y6
20250318 – 20250325	8	154.7 / DN
20250402 – 20250402	1	34.5 / YK
20250412 – 20250416	5	57.6 / X6
20250419 – 20250419	1	35.7 / VO
20250426 – 20250427	2	30.7 / YU
20250504 – 20250506	3	84.2 / D2
20250508 – 20250514	7	85.5 / YP
20250519 – 20250519	1	30.2 / WR
20250630 – 20250707	8	171.1 / DN
20250712 – 20250712	1	102.0 / WP
20250723 – 20250724	2	84.2 / CL

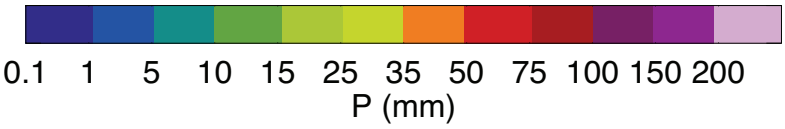
20250818 – 20250820	3	44.7 / VO
20250827 – 20250829	3	43.4 / W9
20250831 – 20250901	2	75.0 / KP
20250908 – 20250909	2	95.4 / YU
20250912 – 20250913	2	97.4 / XC
20250921 – 20250921	1	116.6 / VU
20250928 – 20250929	2	305.9 / UU
20251011 – 20251016	6	298.4 / C9
20251106 – 20251106	1	81.9 / X9

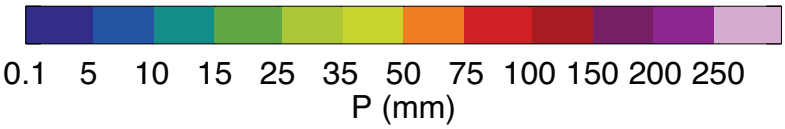
En cada figura d'acumulacions queda reflectit el factor de calibració FC aplicat (en termes de pluja, no DBZ) i el valor màxim de la paleta de colors associada a l'acumulació (*lim*). A continuació es mostren les diferents paletes de colors associades a les acumulacions.

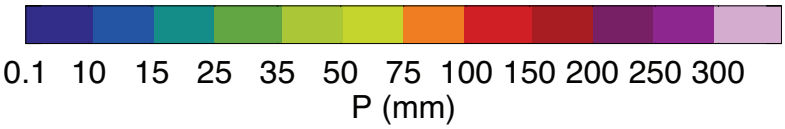


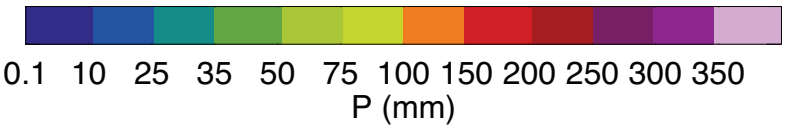


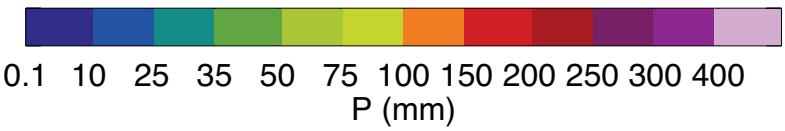




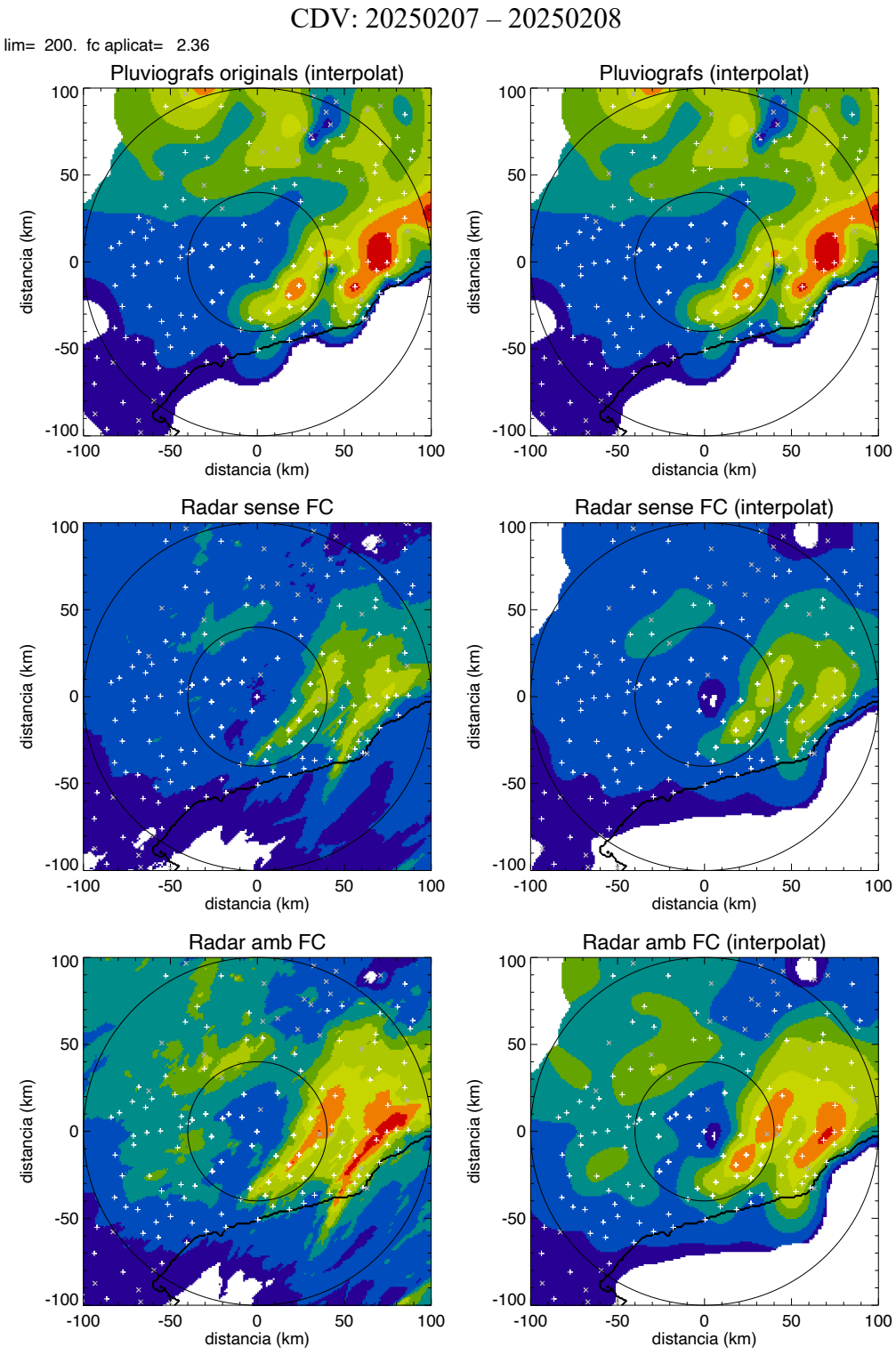




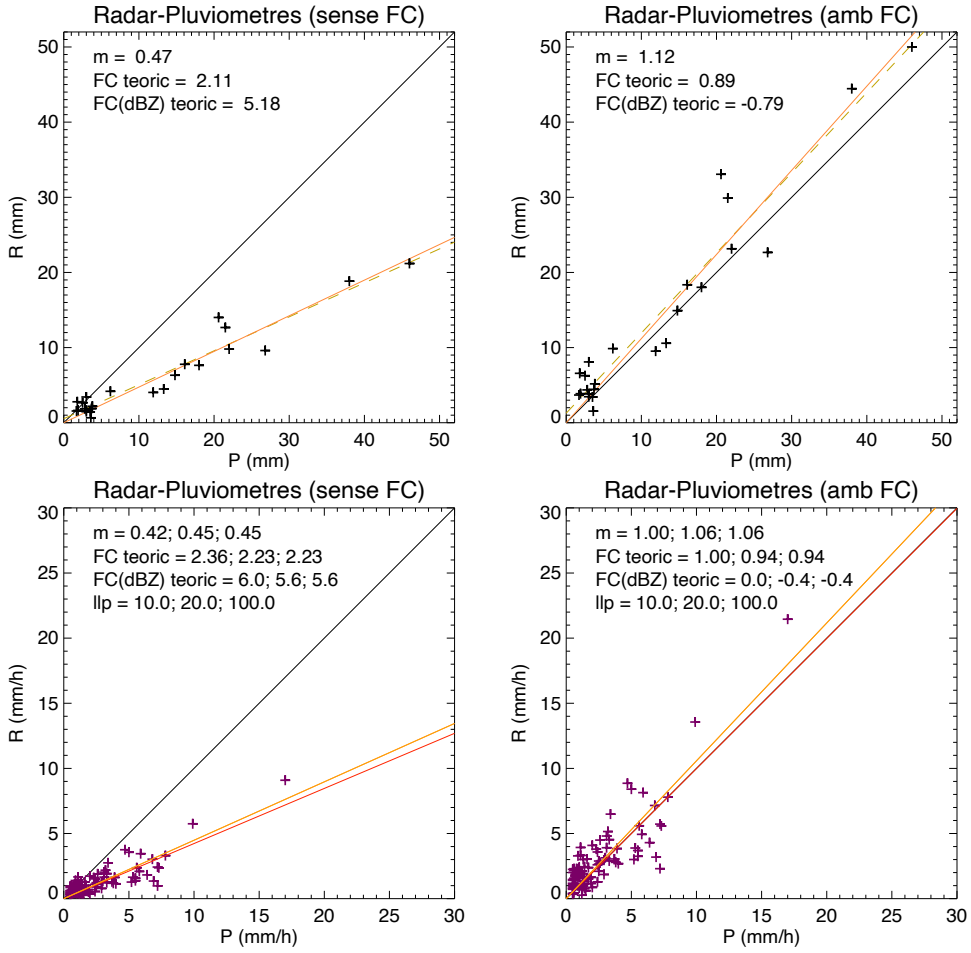




Radar CDV

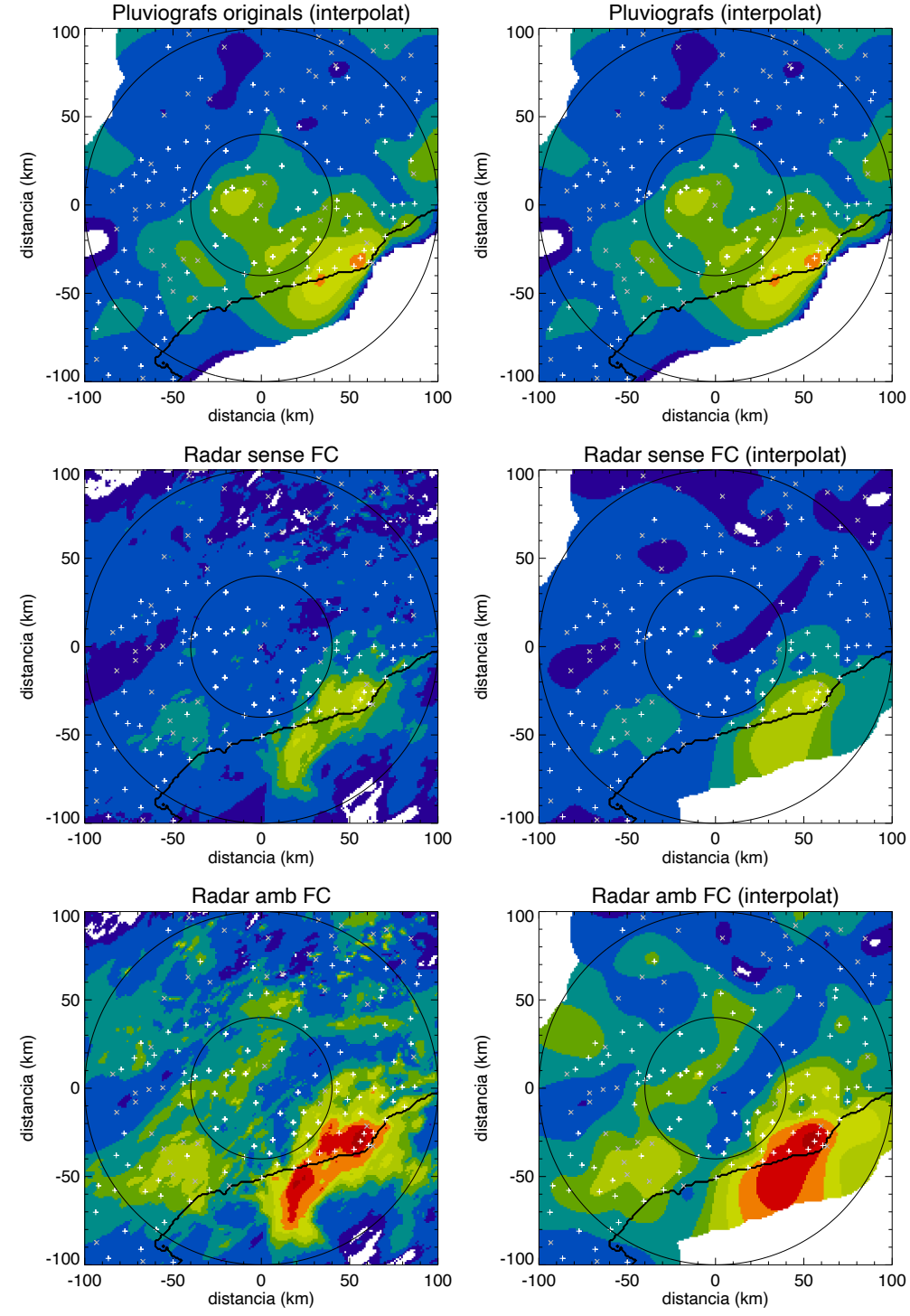

CDV: 20250207 – 20250208
lim= 200. fc aplicat= 2.36
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
100
50
0
-50
-100

CDV: 20250207 – 20250208

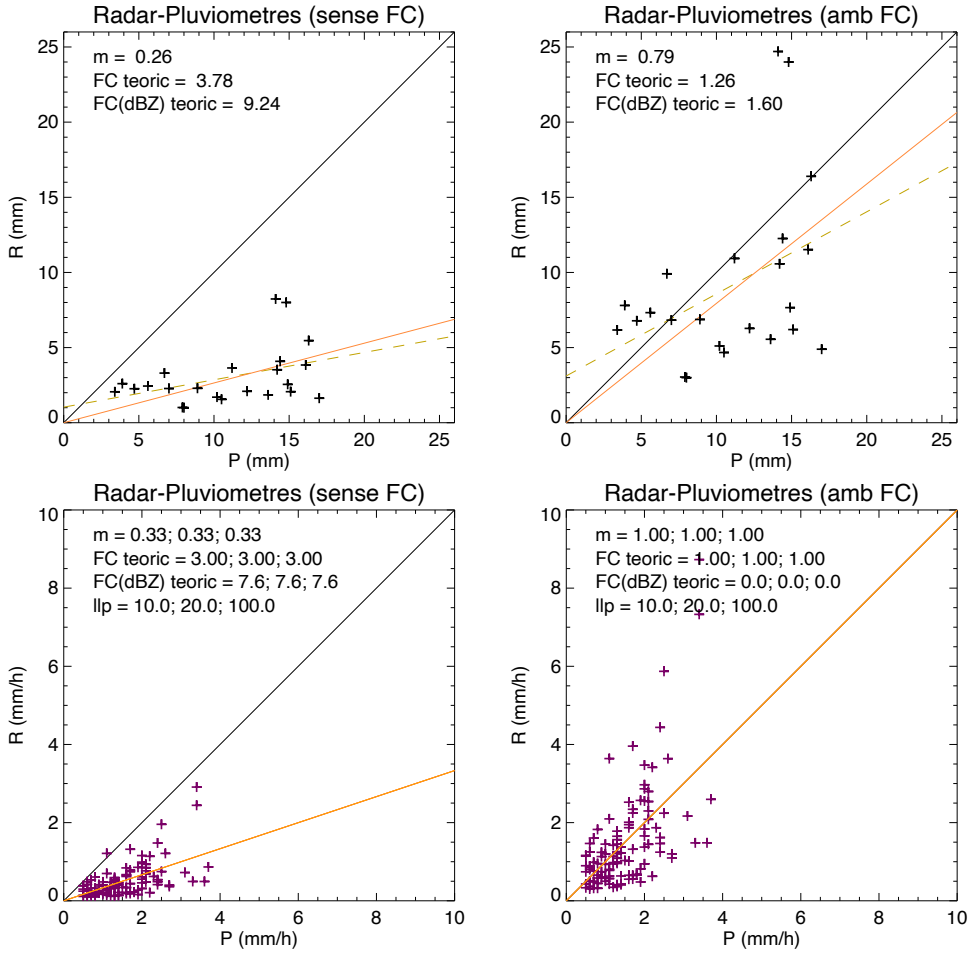


CDV: 20250212 – 20250212

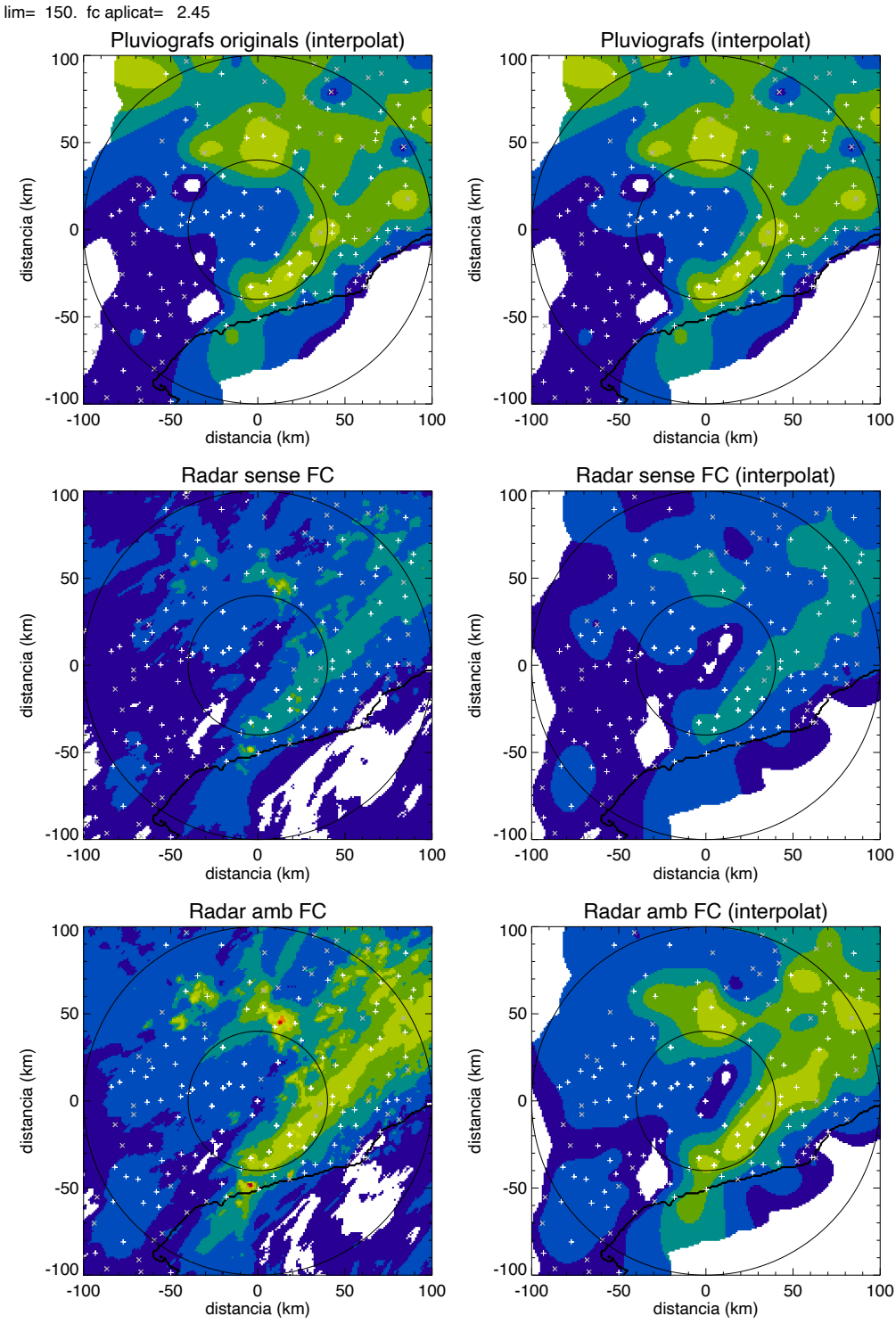
lim= 200. fc aplicat= 3.00



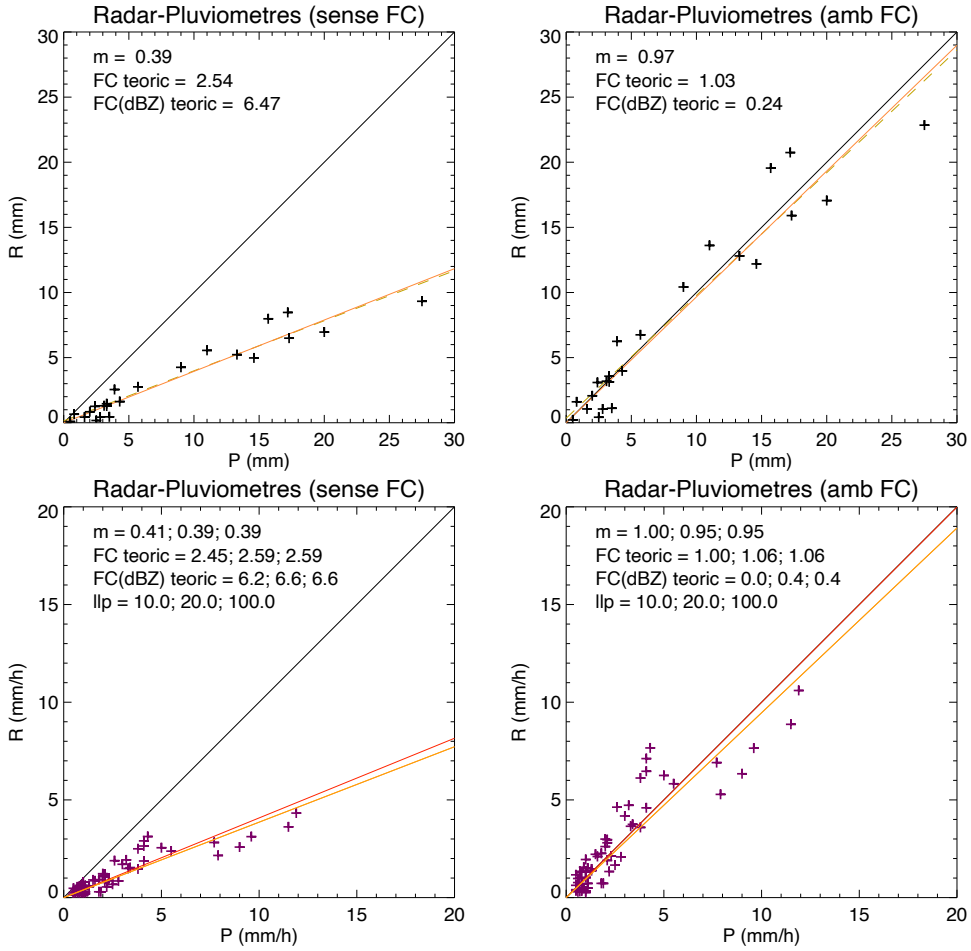
CDV: 20250212 – 20250212



CDV: 20250222 – 20250222

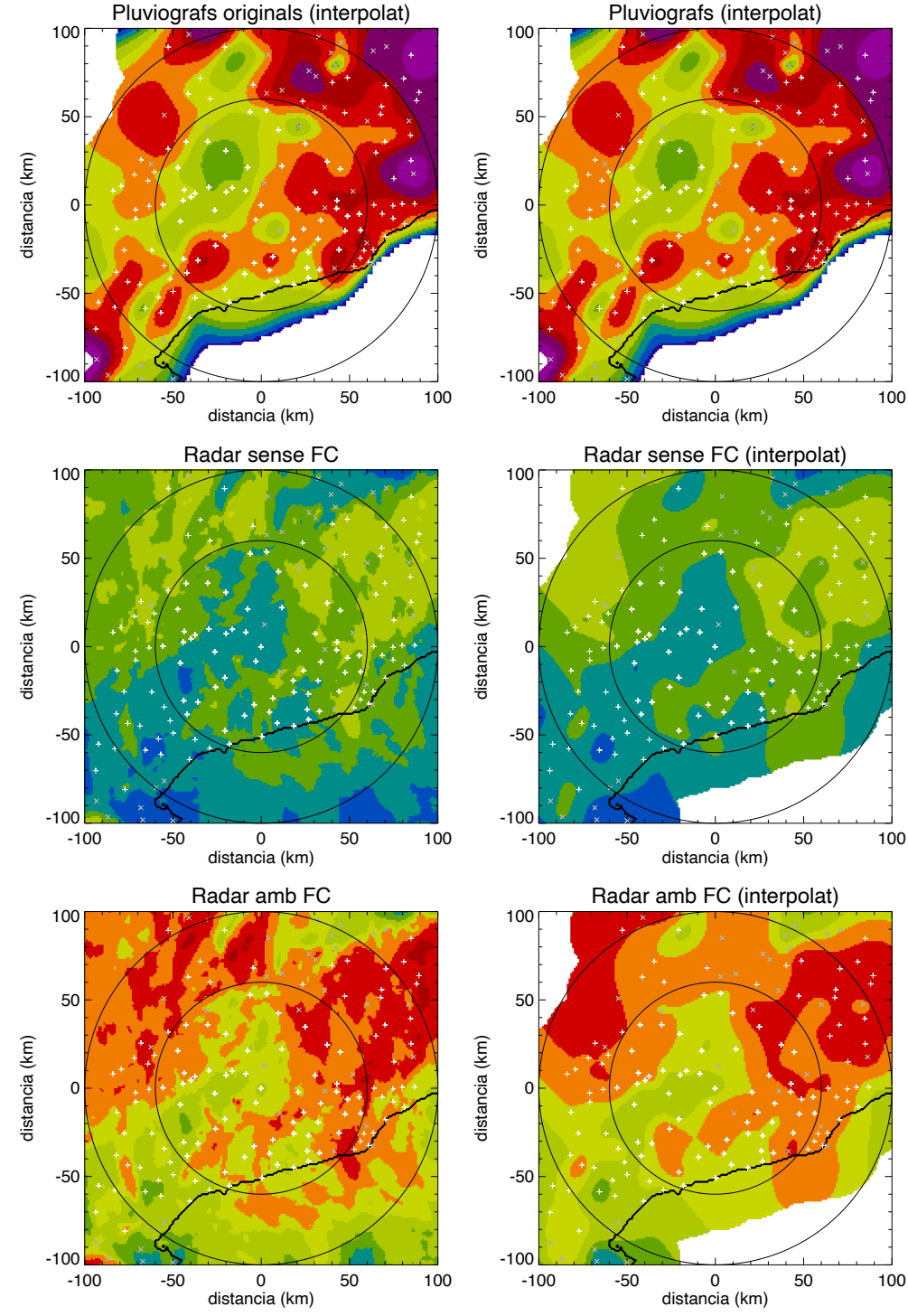


CDV: 20250222 – 20250222

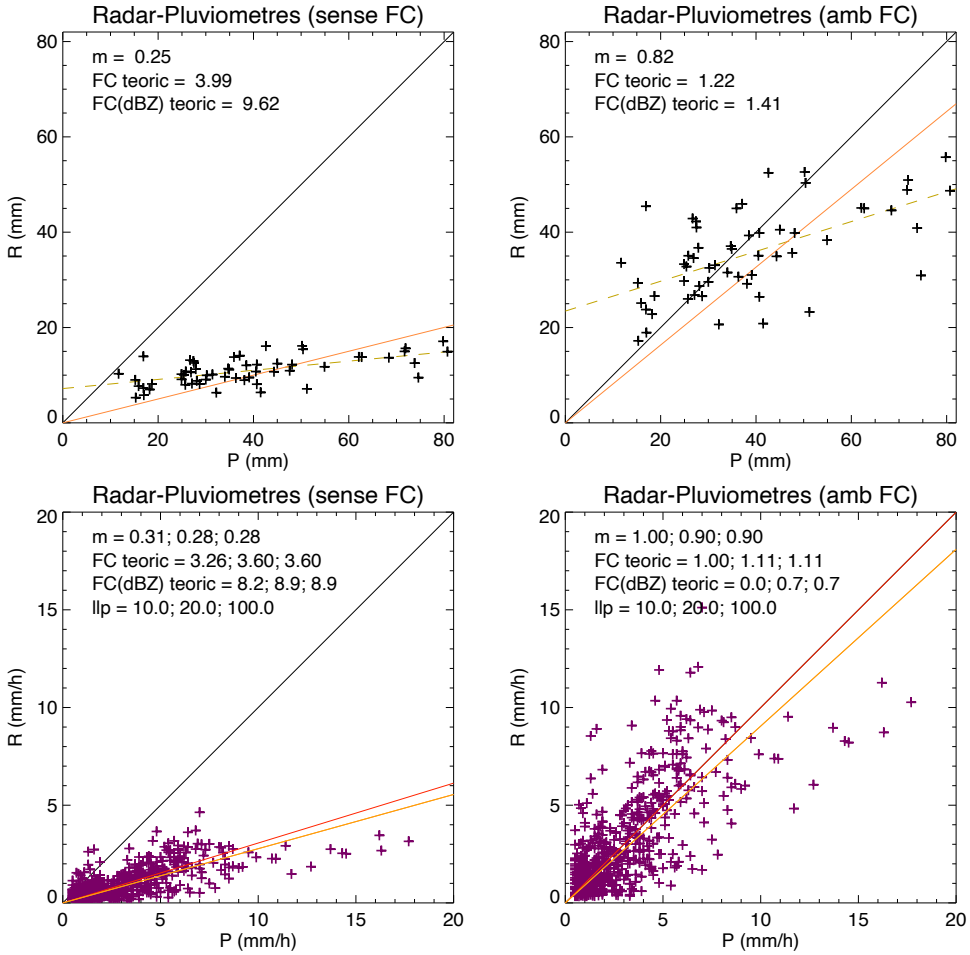


CDV: 20250306 – 20250309

lim= 200. fc aplicat= 3.26

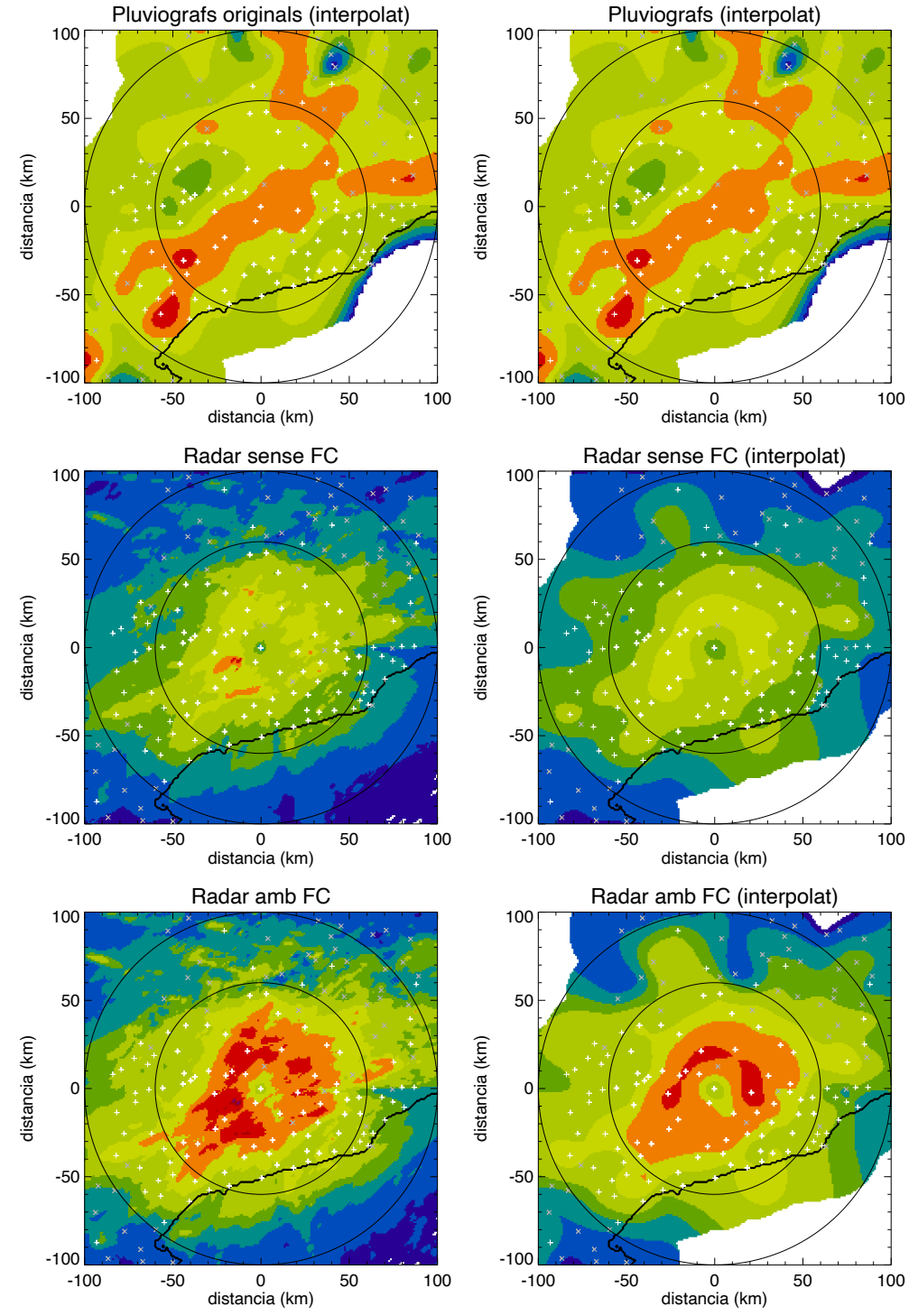


CDV: 20250306 – 20250309

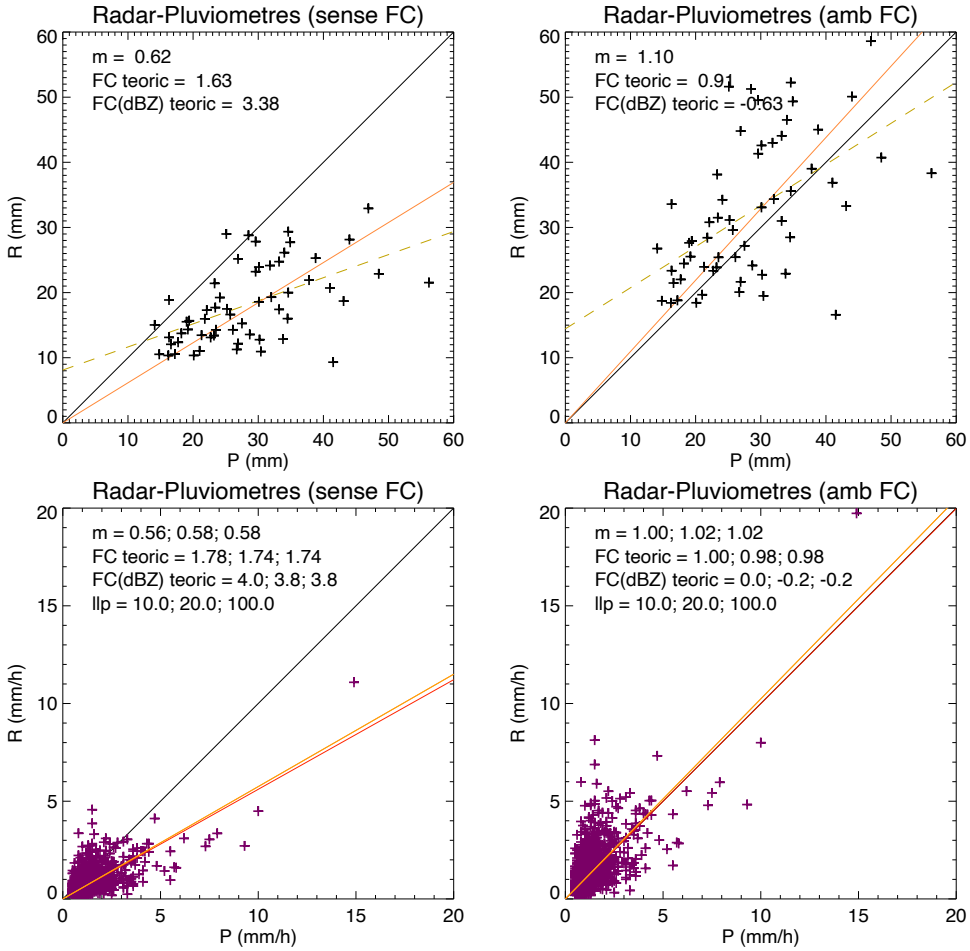


CDV: 20250311 – 20250314

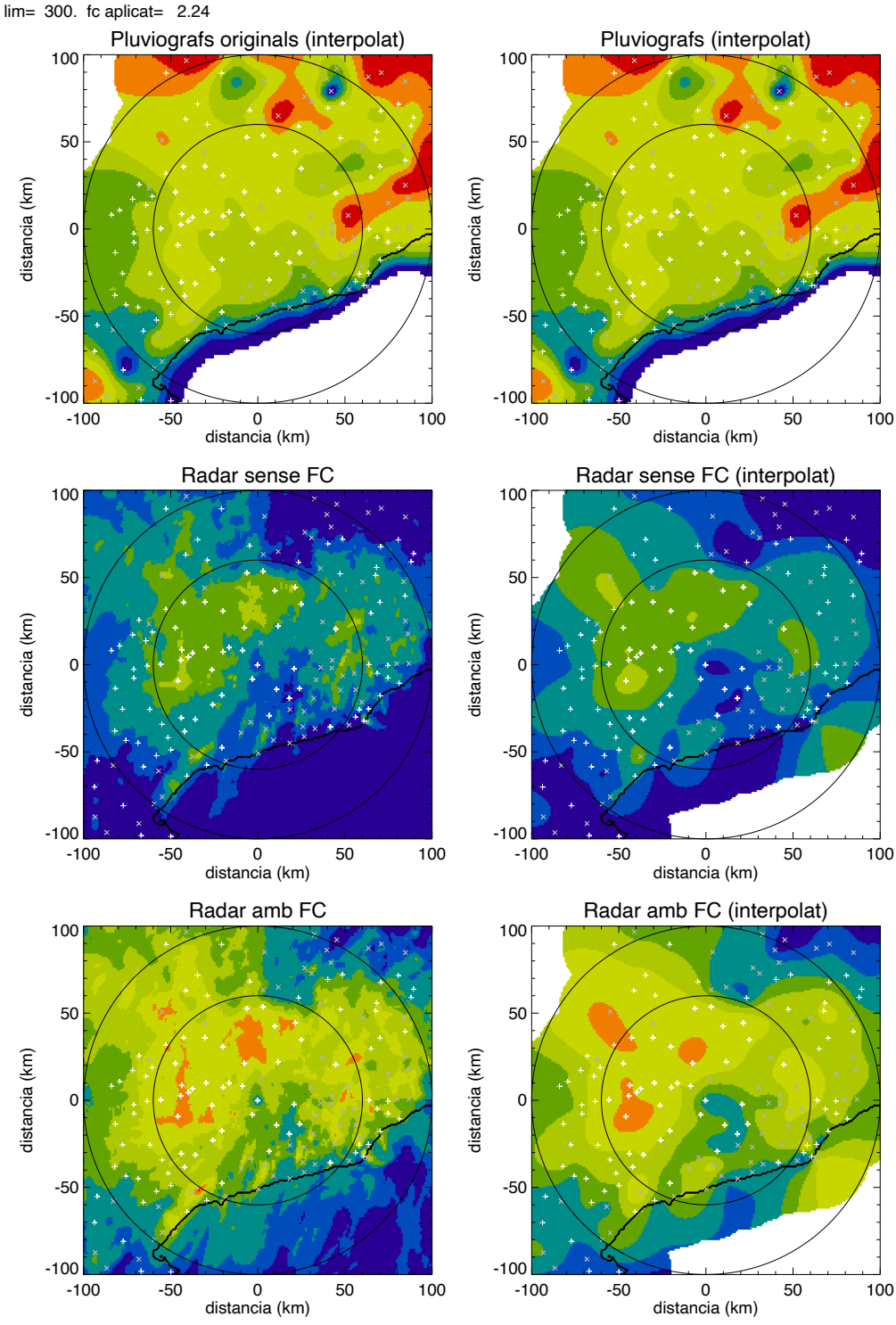
lim= 200. fc aplicat= 1.78



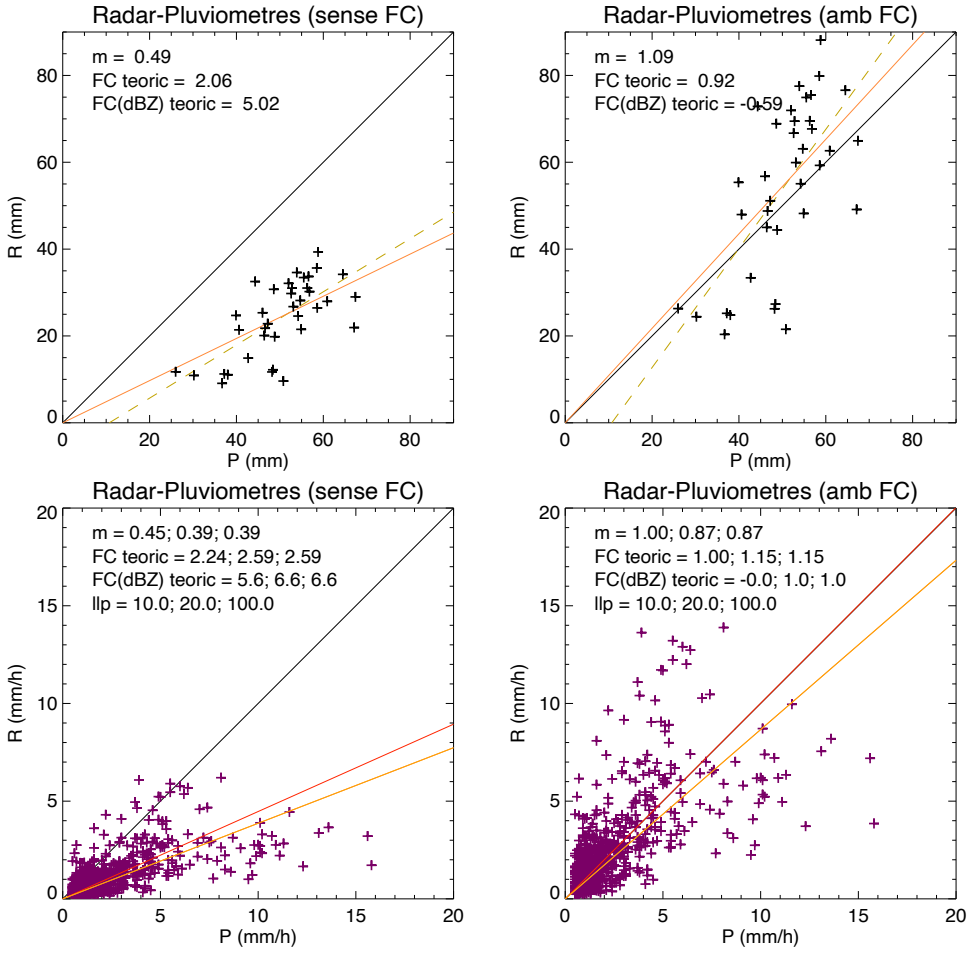
CDV: 20250311 – 20250314



CDV: 20250318 – 20250325

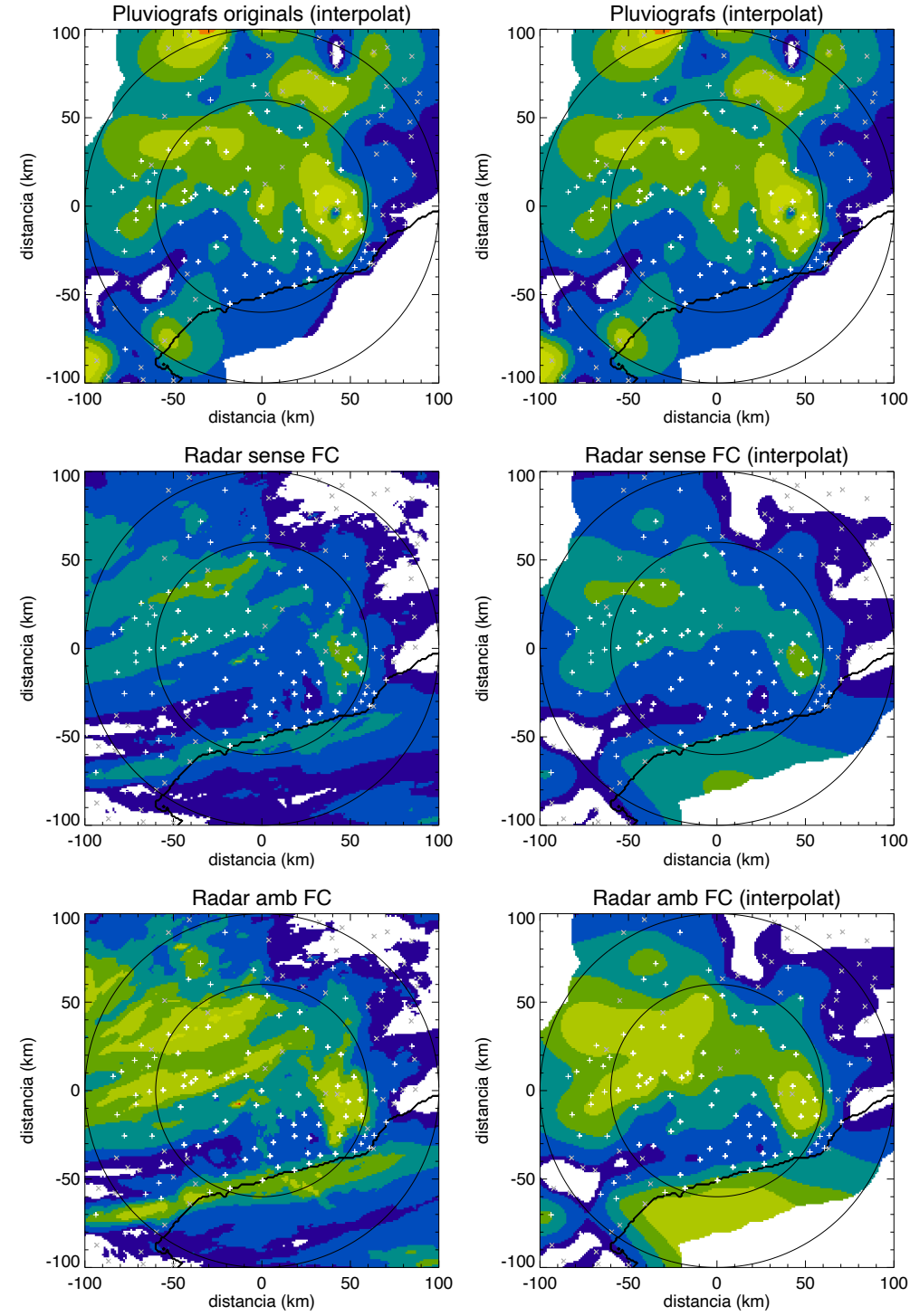


CDV: 20250318 – 20250325

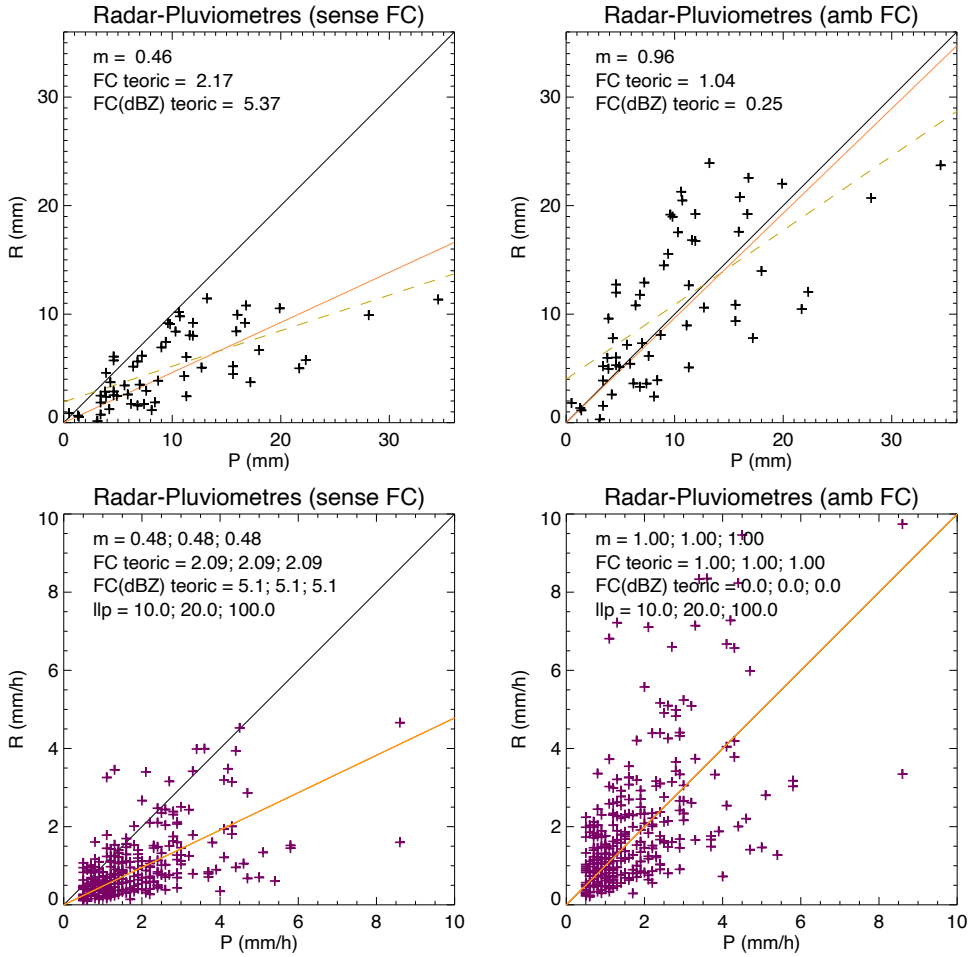


CDV: 20250402 – 20250402

lim= 150. fc aplicat= 2.09

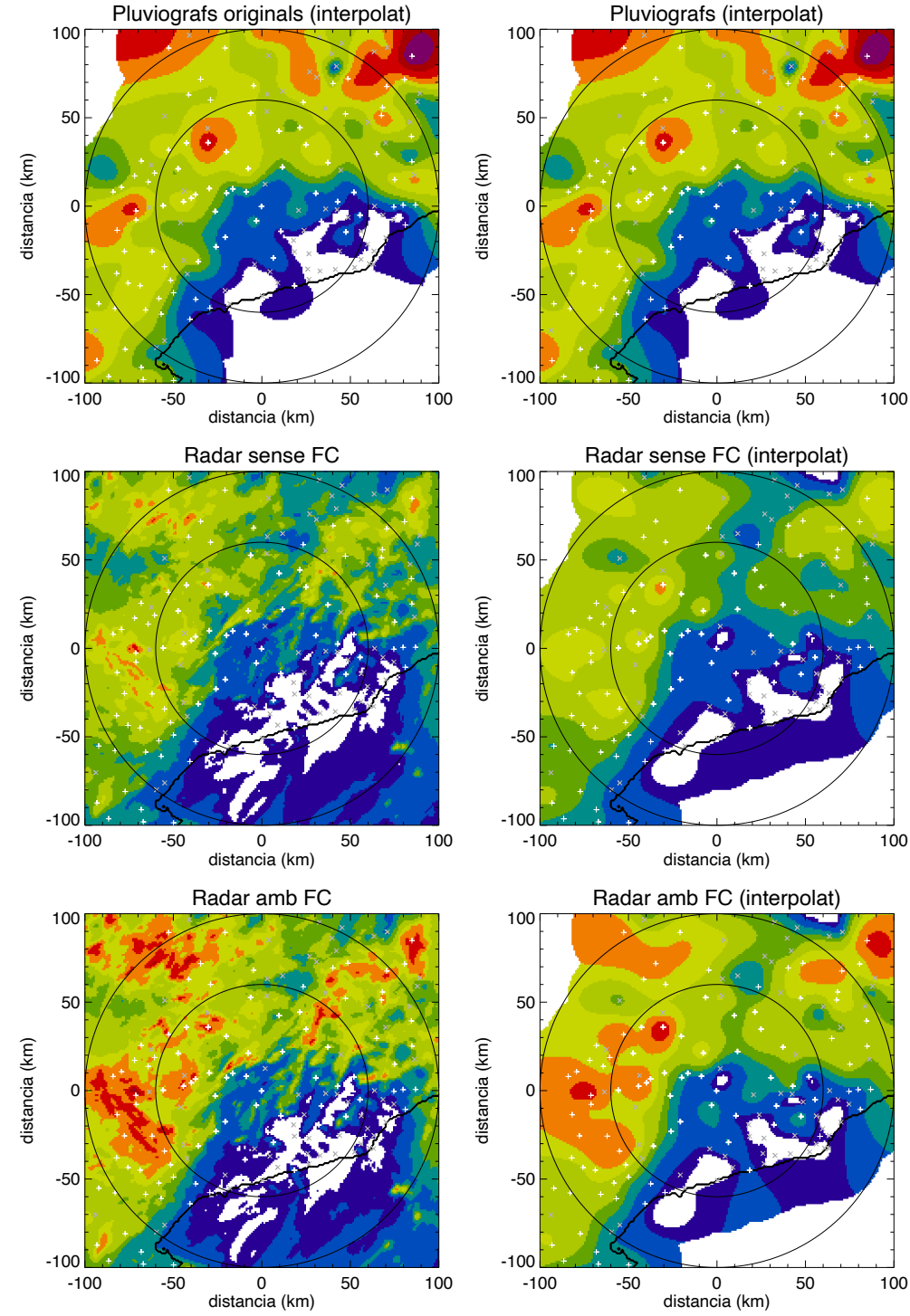


CDV: 20250402 – 20250402

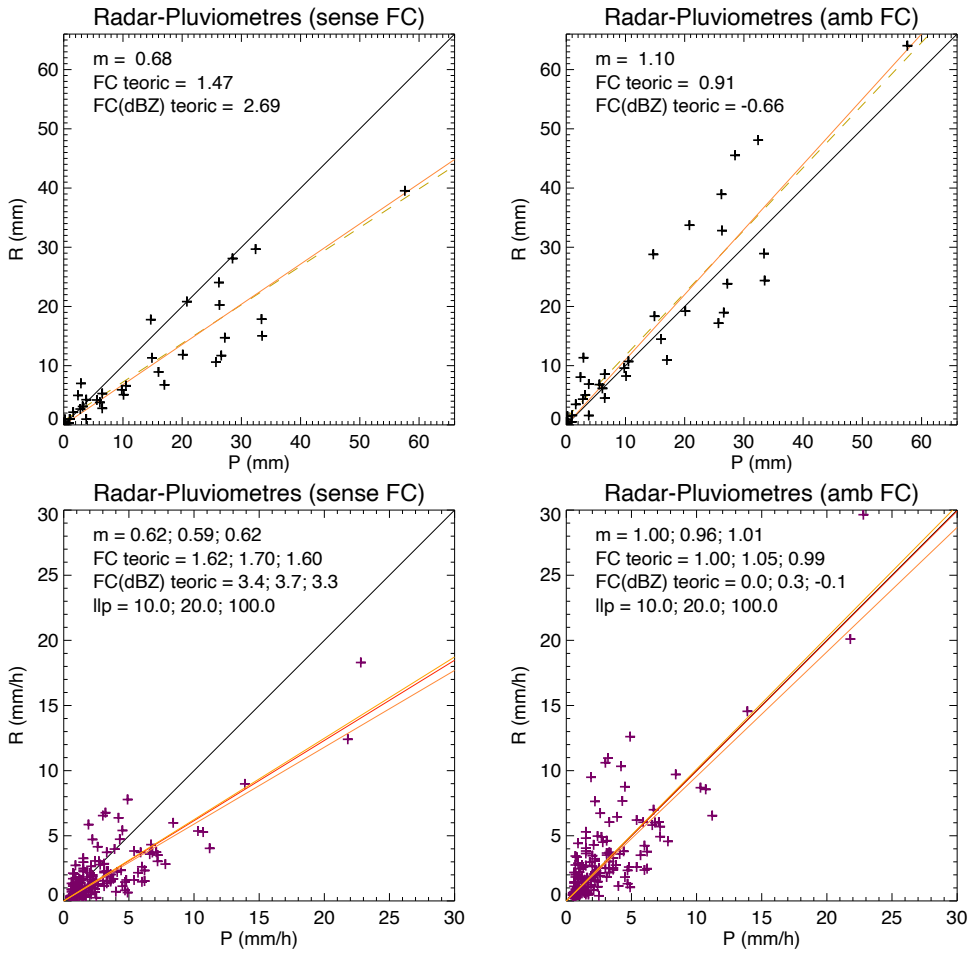


CDV: 20250412 – 20250416

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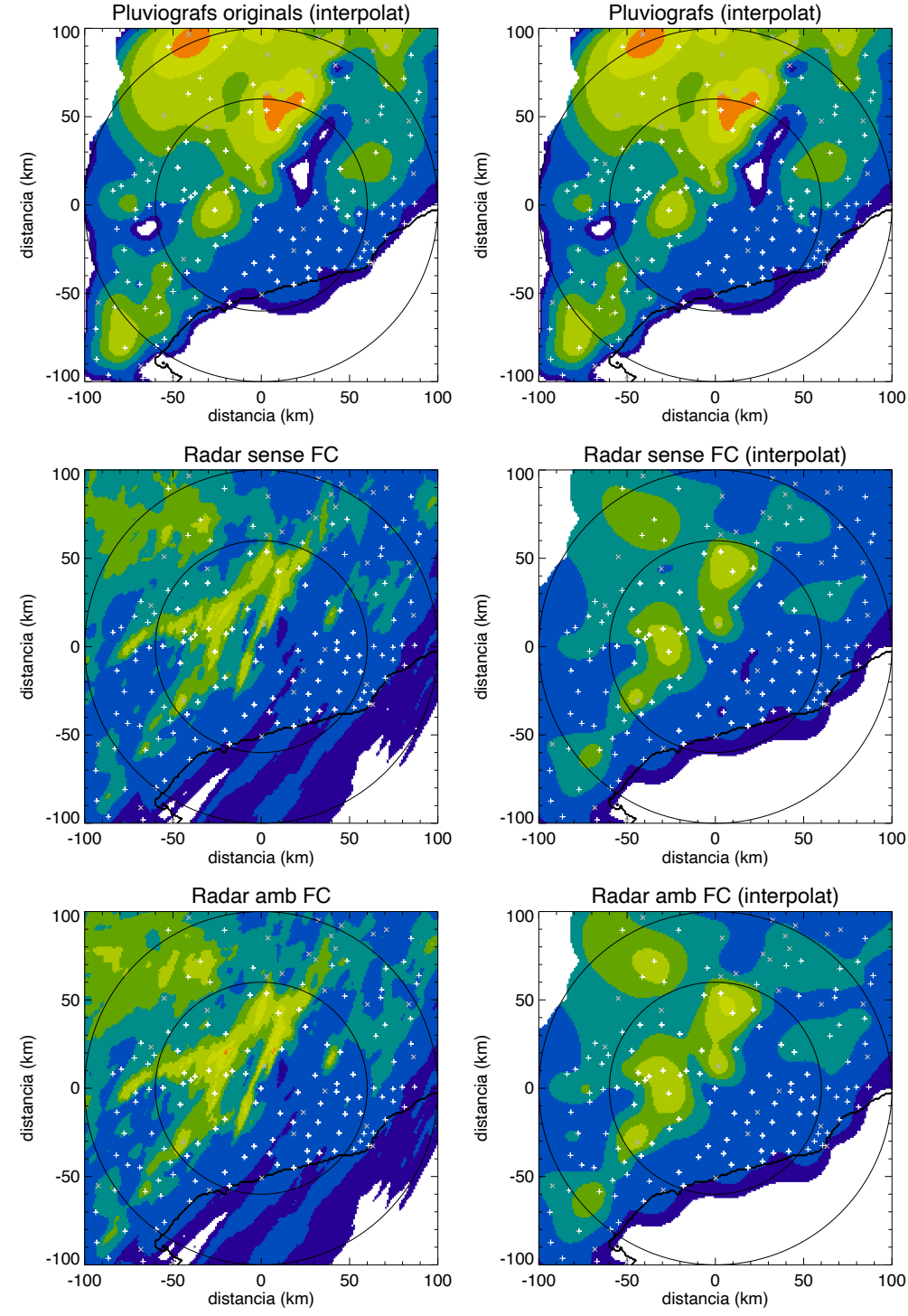


CDV: 20250412 – 20250416

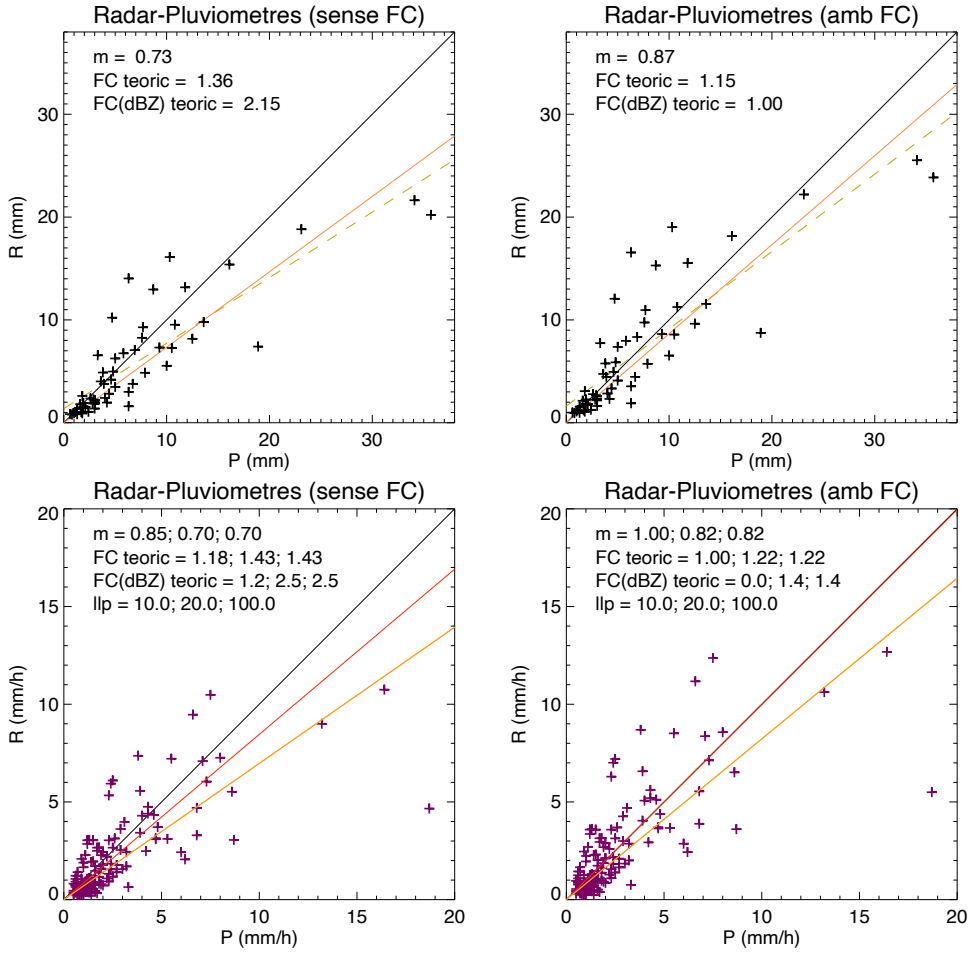


CDV: 20250419 – 20250419

lim= 150. fc aplicat= 1.18

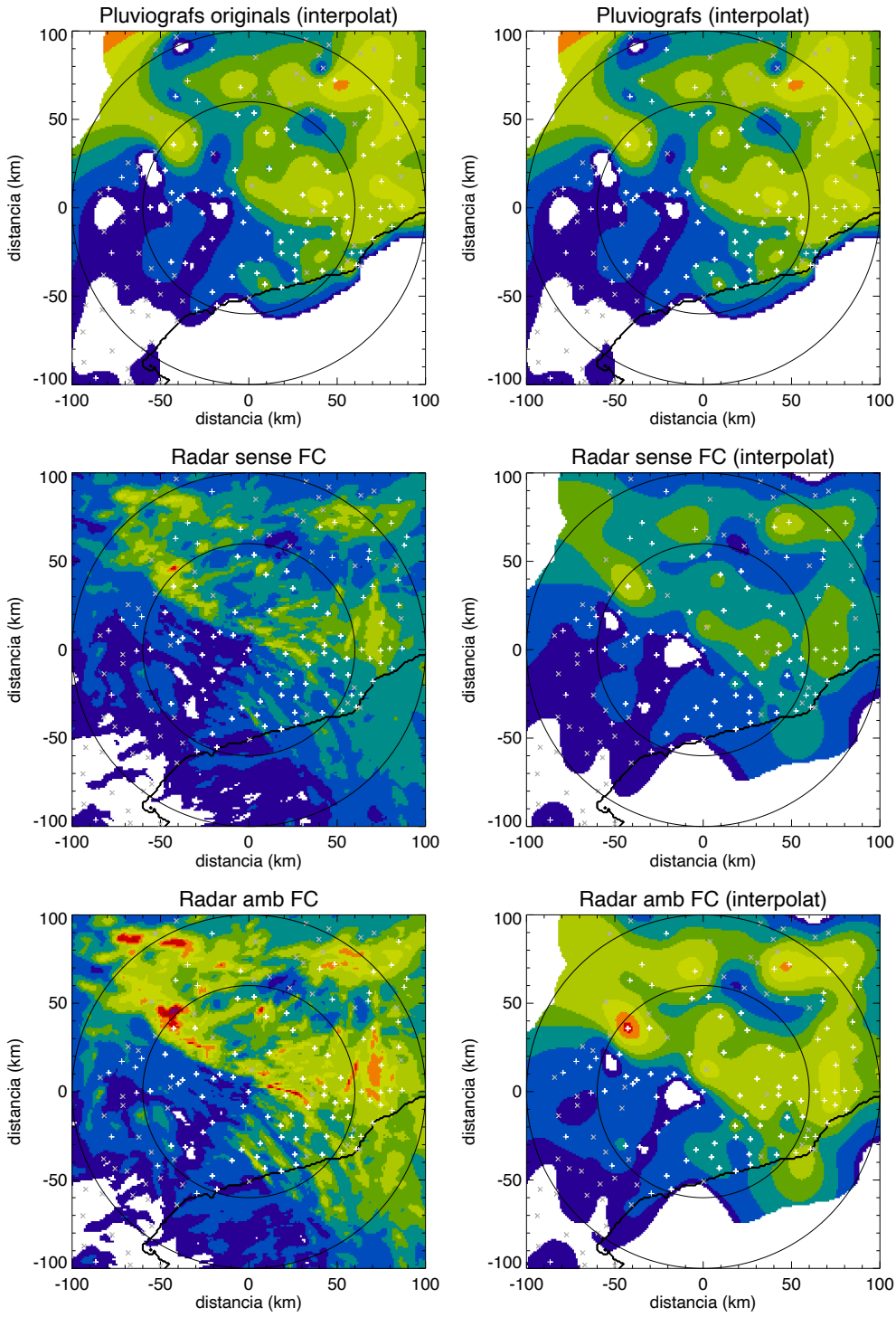


CDV: 20250419 – 20250419

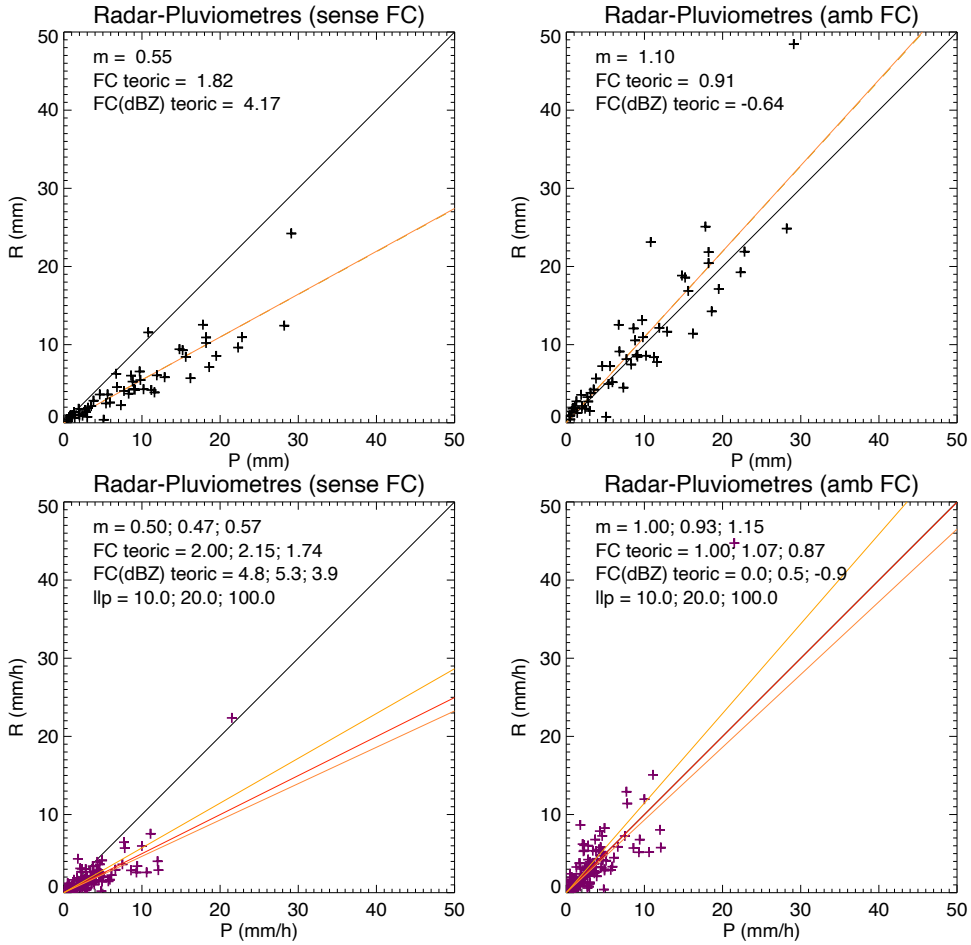


CDV: 20250426 – 20250427

lim= 150. fc aplicat= 2.00

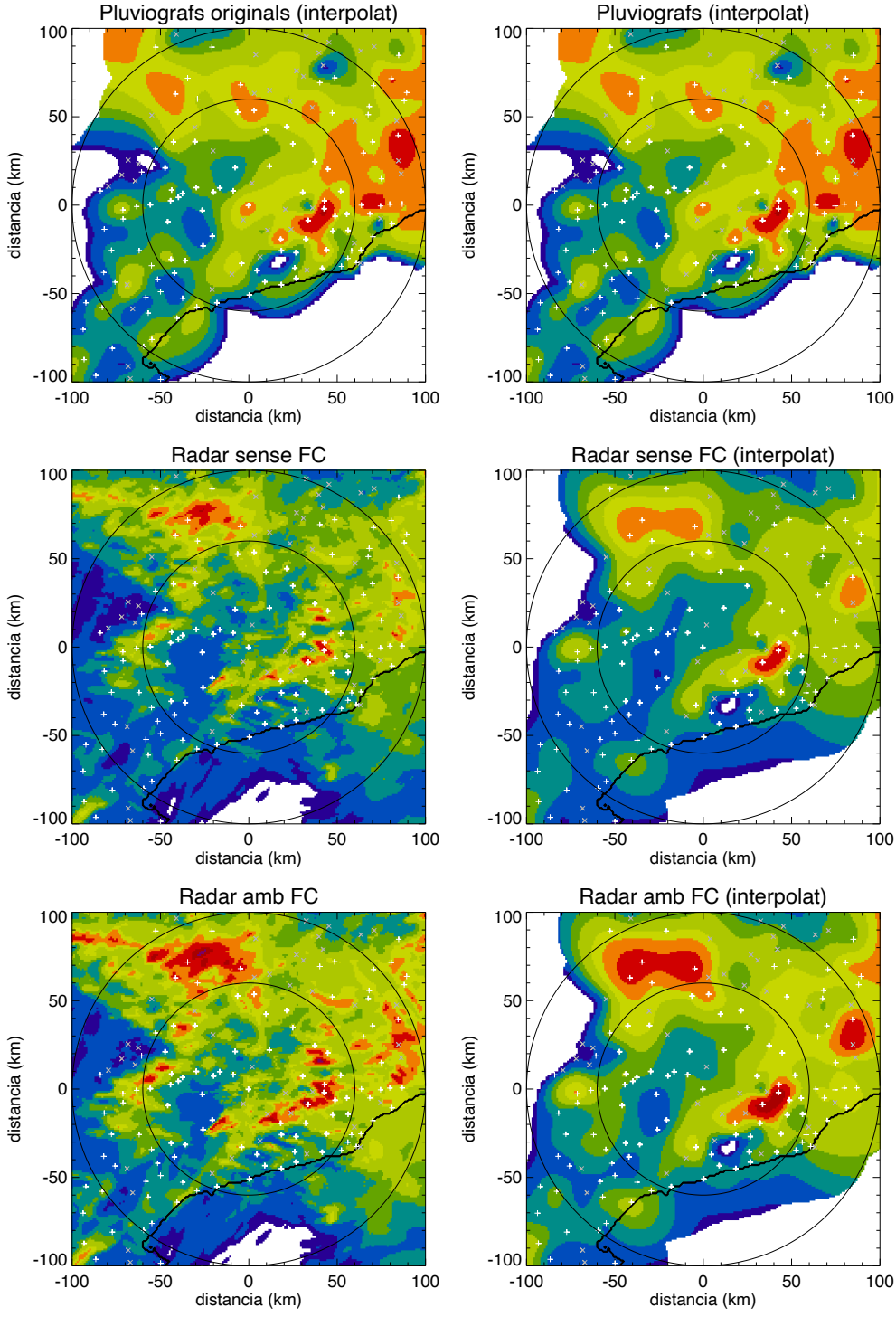


CDV: 20250426 – 20250427

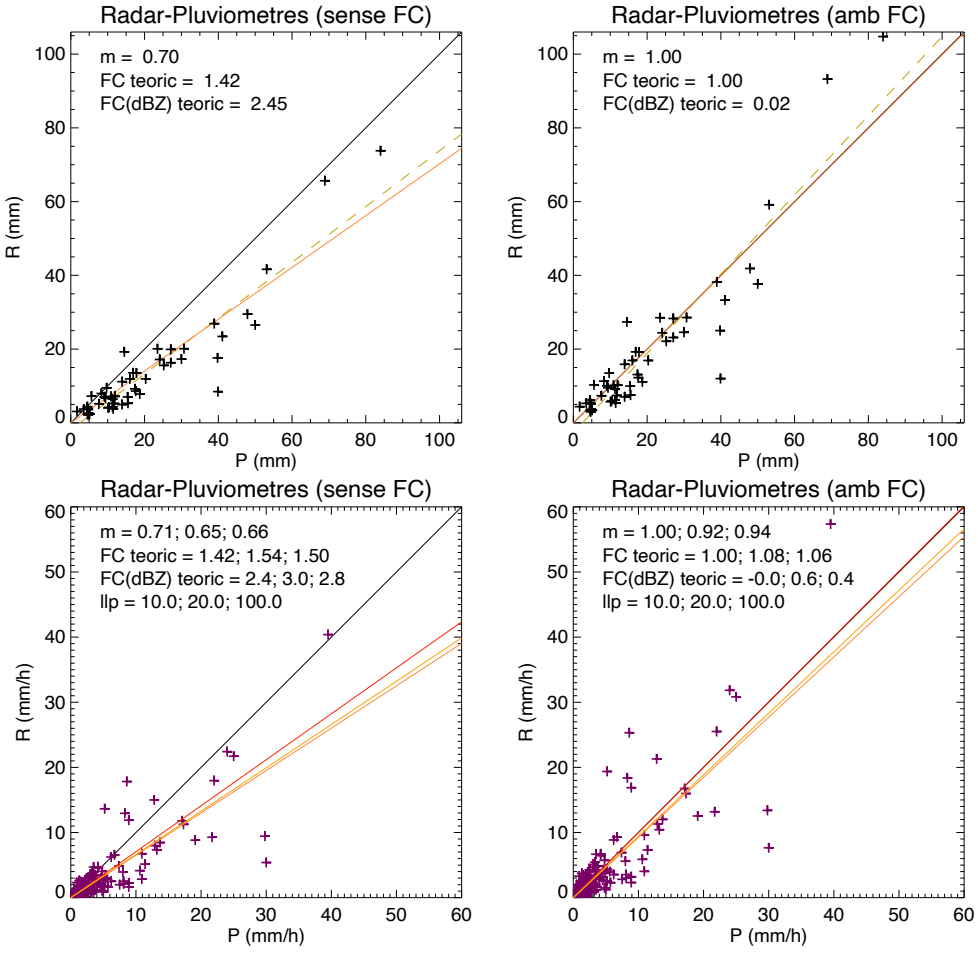


CDV: 20250504 – 20250506

lim= 200. fc aplicat= 1.42

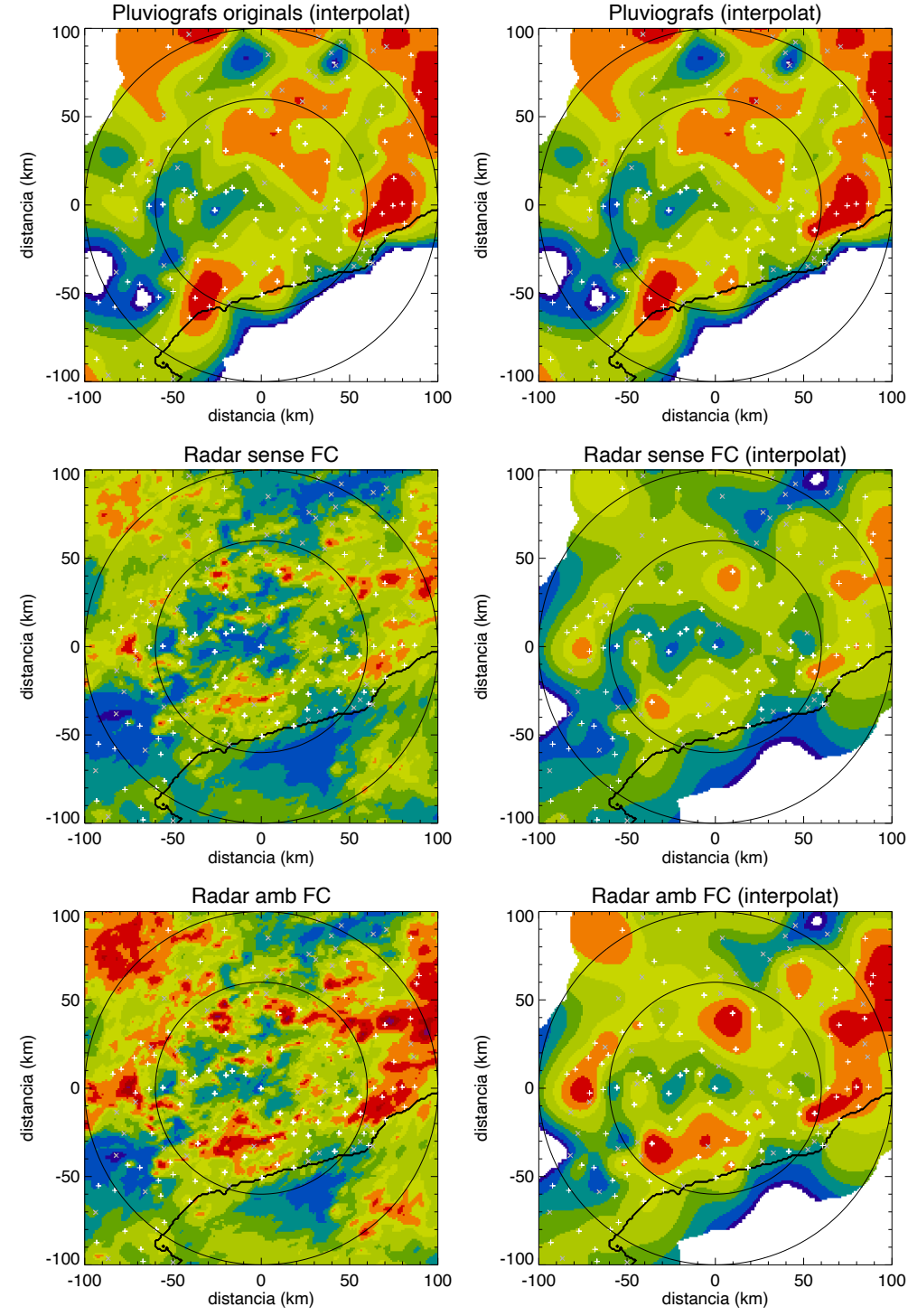


CDV: 20250504 – 20250506

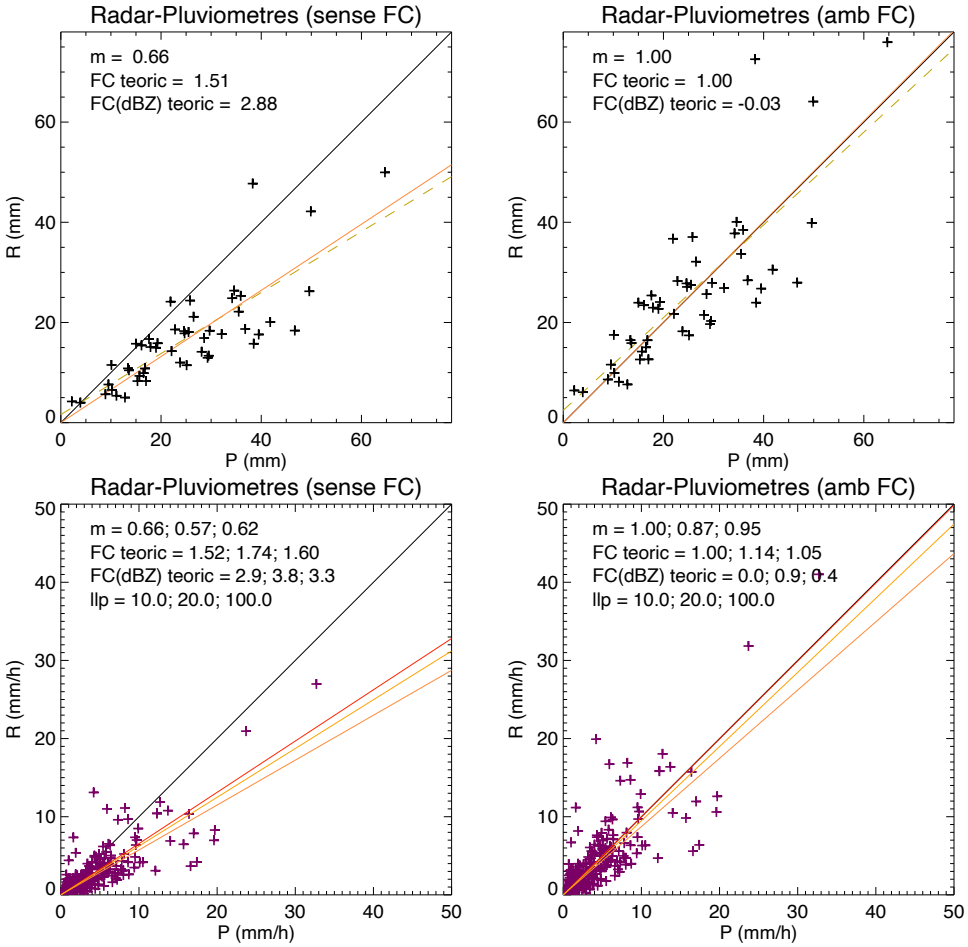


CDV: 20250508 – 20250514

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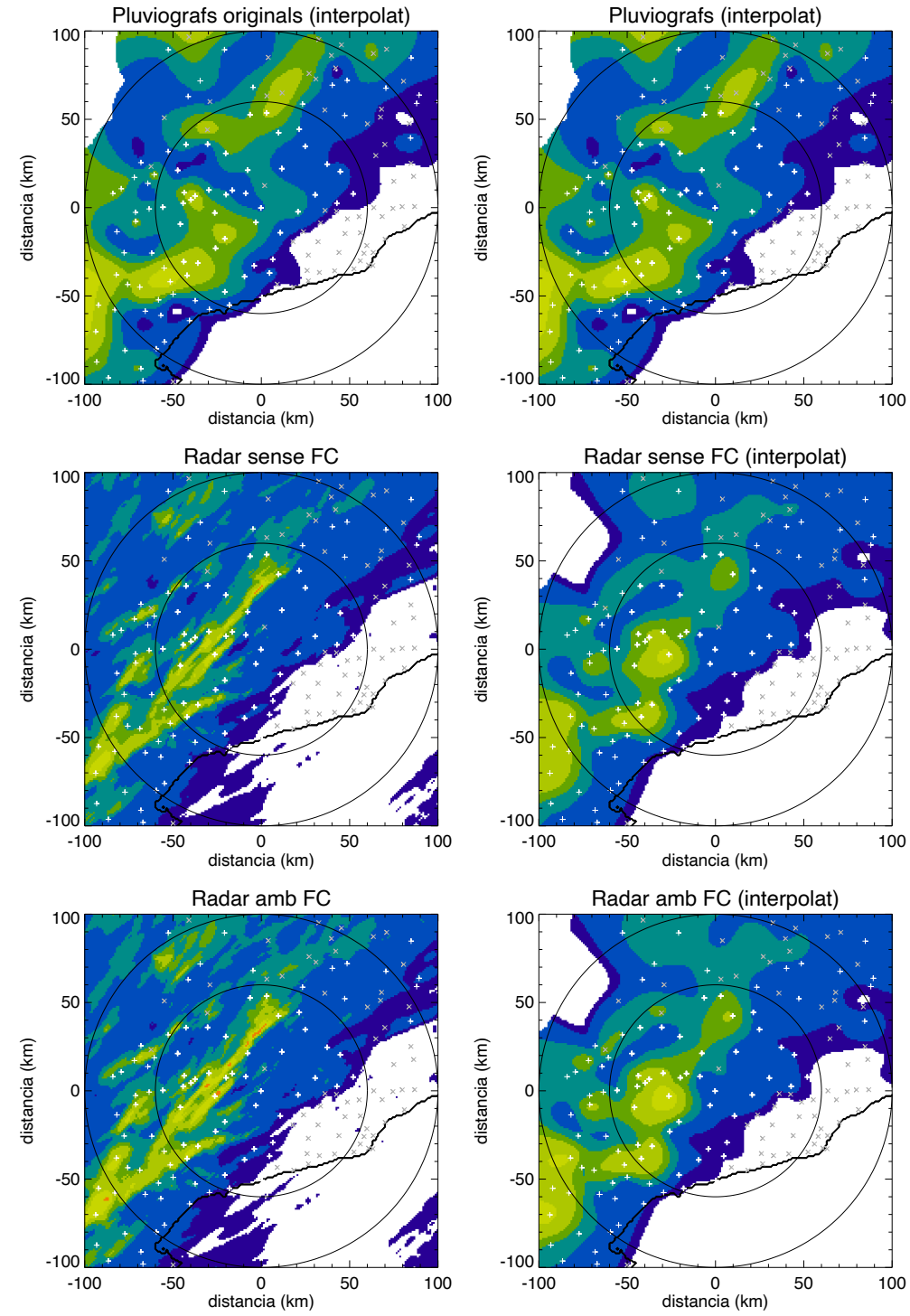


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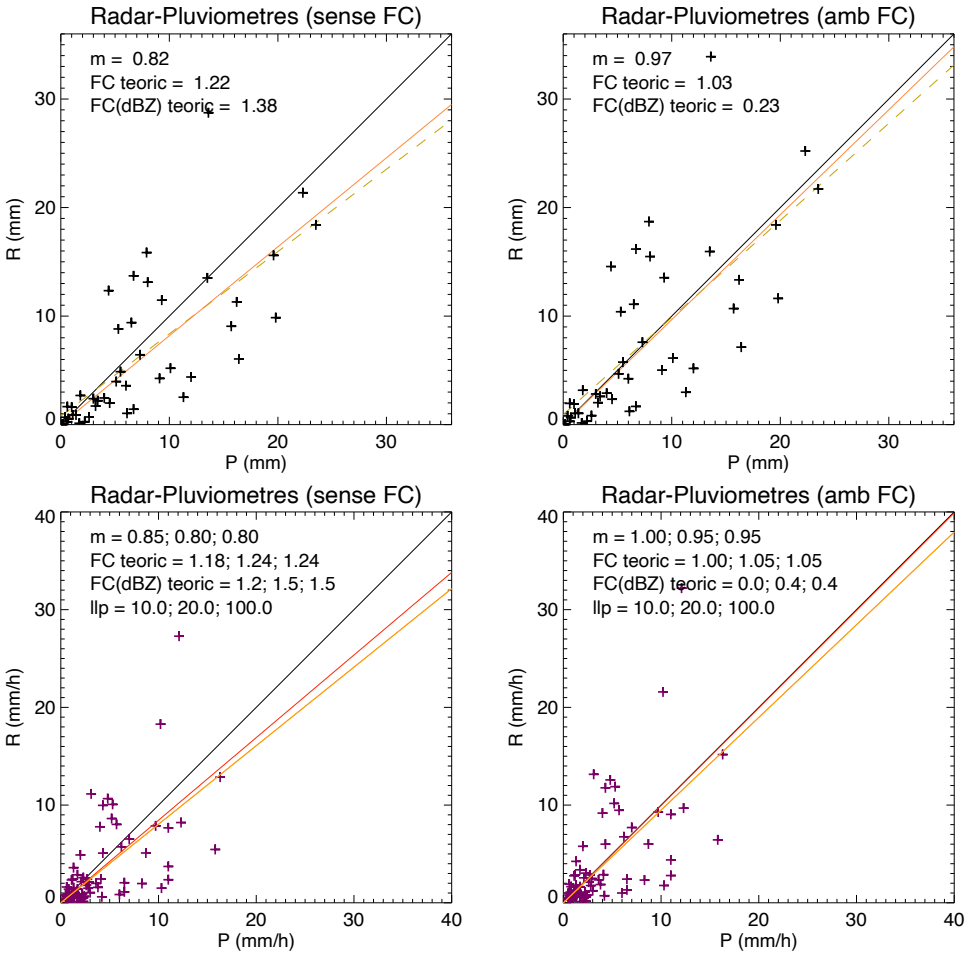


CDV: 20250519 – 20250519

lim= 150. fc aplicat= 1.18

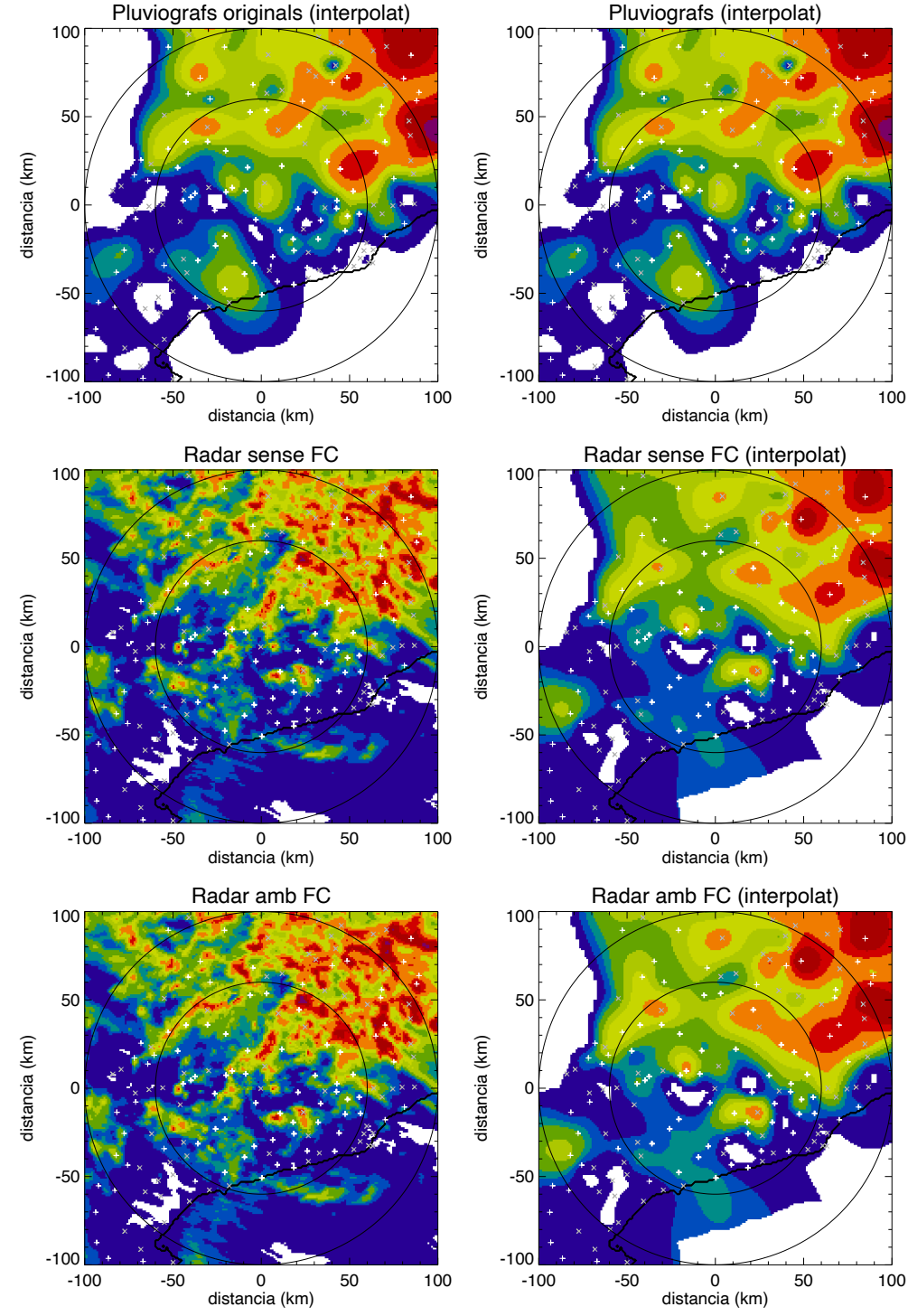


CDV: 20250519 – 20250519

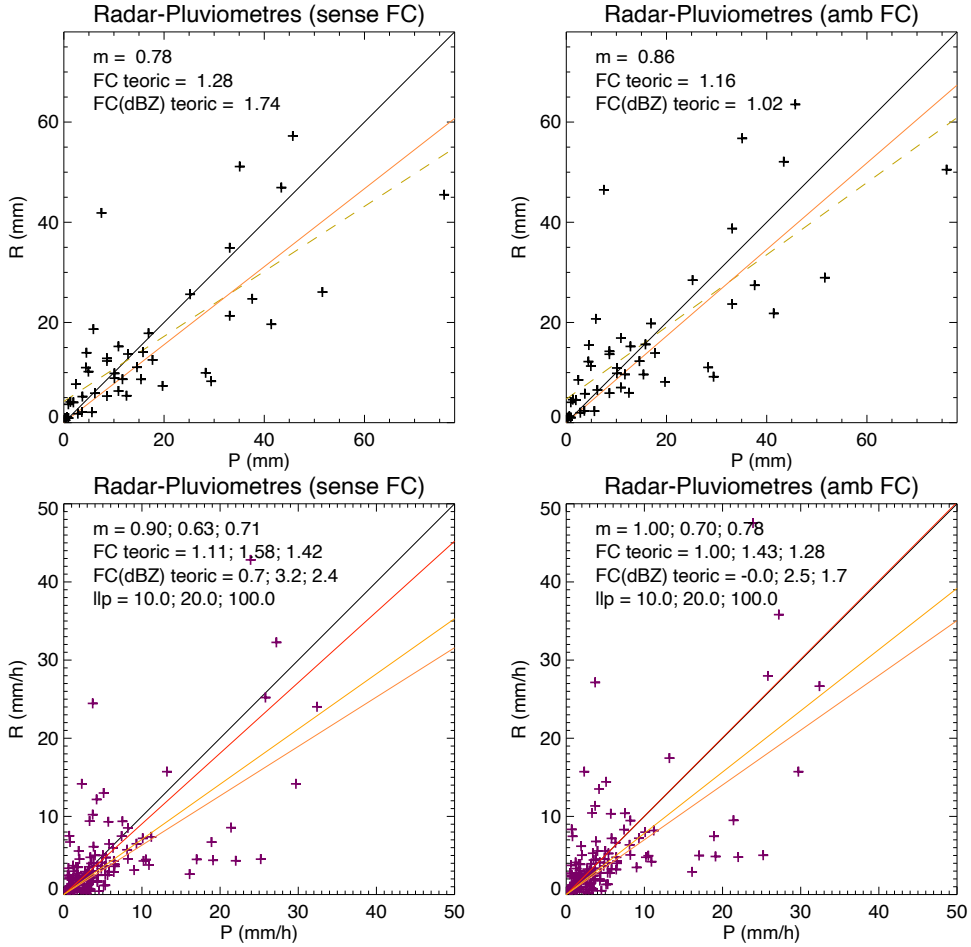


CDV: 20250630 – 20250707

lim= 250. fc aplicat= 1.11

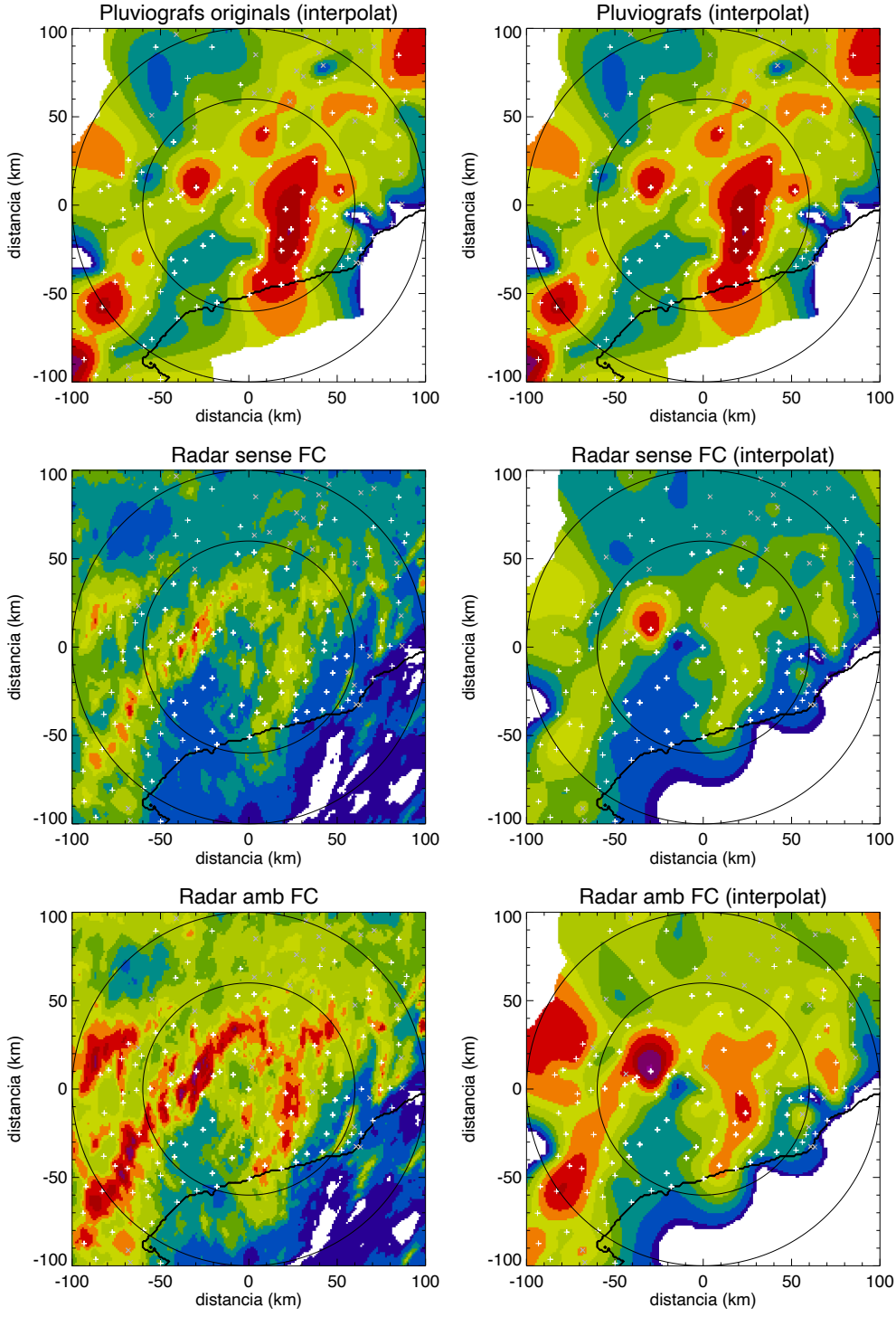


CDV: 20250630 – 20250707

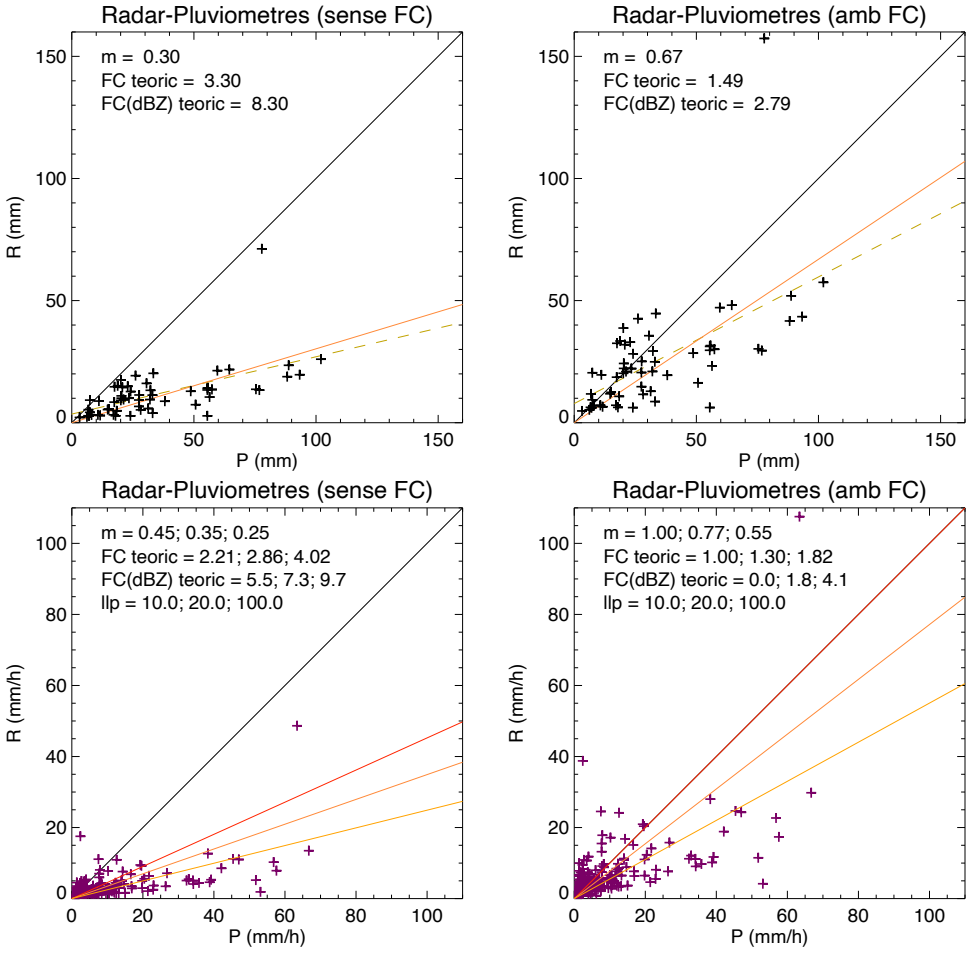


CDV: 20250712 – 20250712

lim= 200. fc aplicat= 2.21

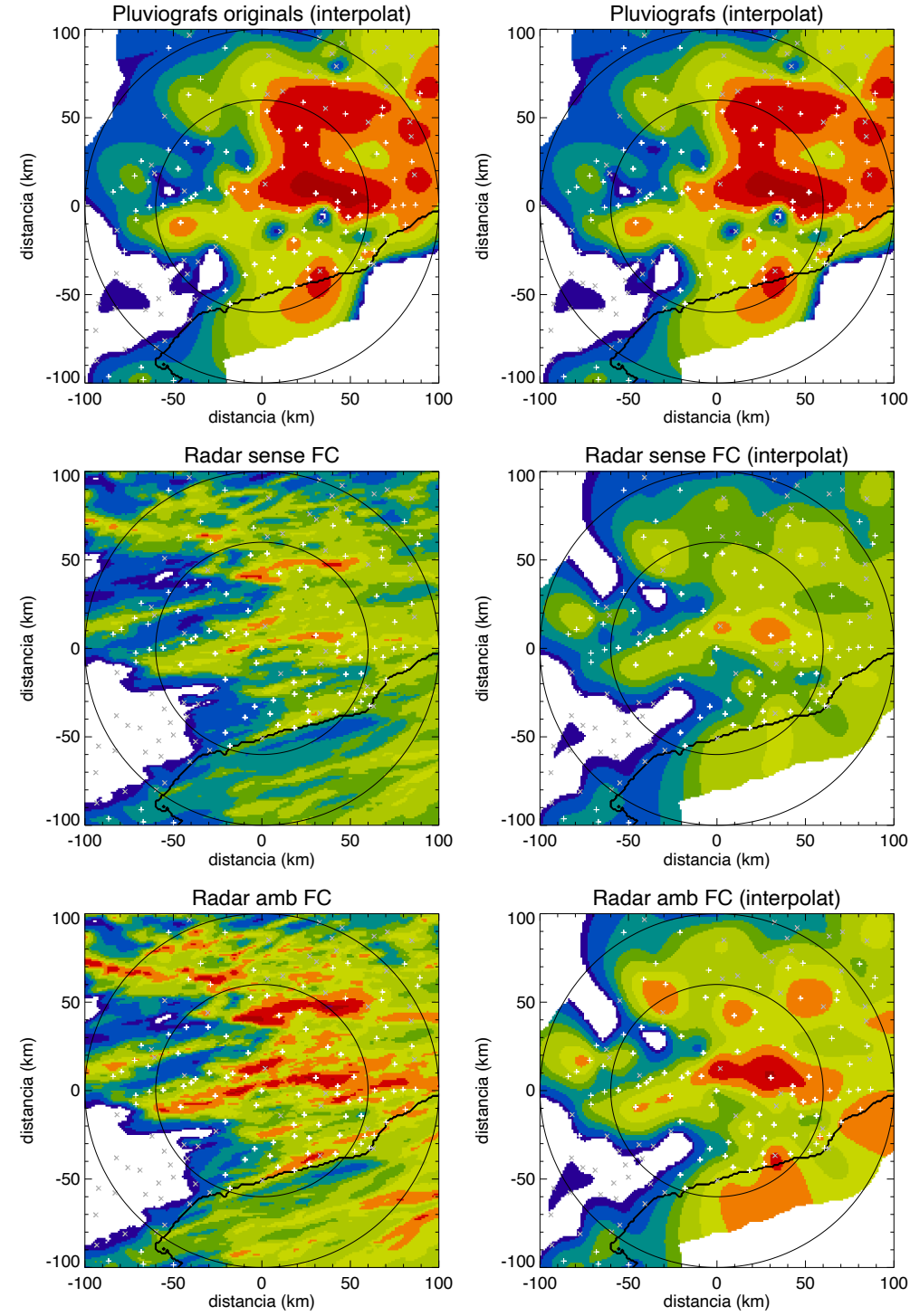


CDV: 20250712 – 20250712

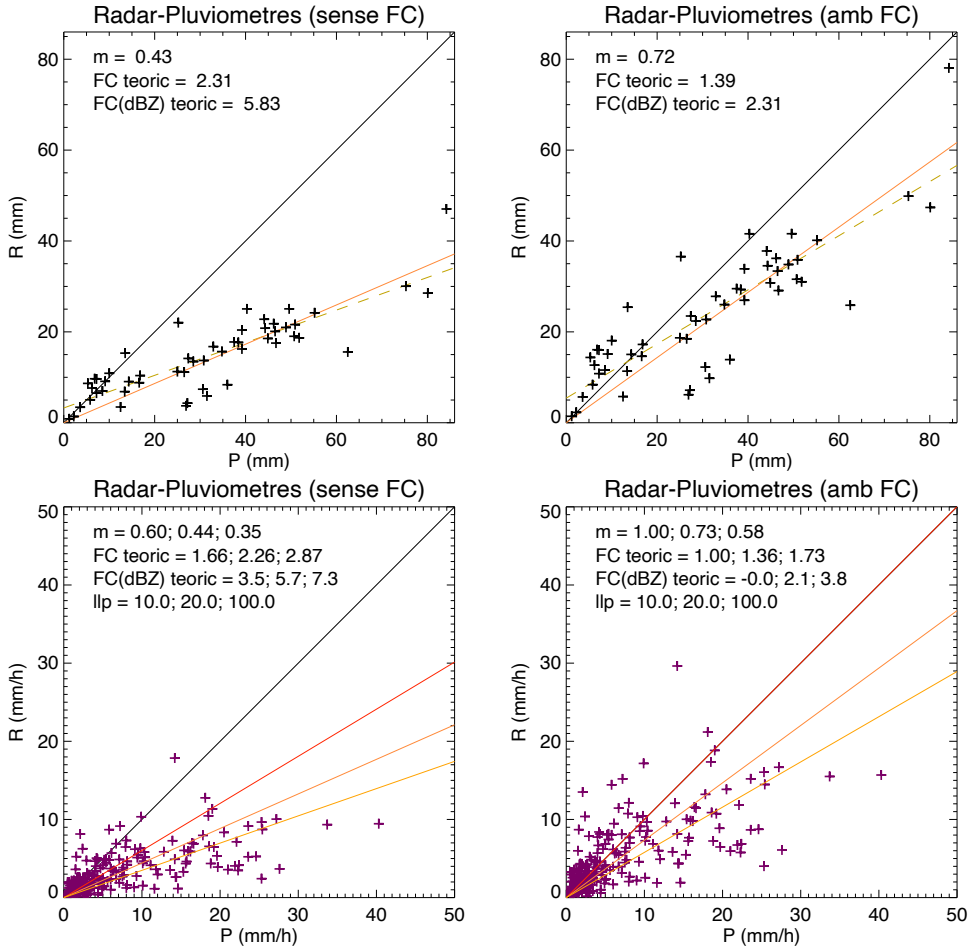


CDV: 20250723 – 20250724

lim= 200. fc aplicat= 1.66

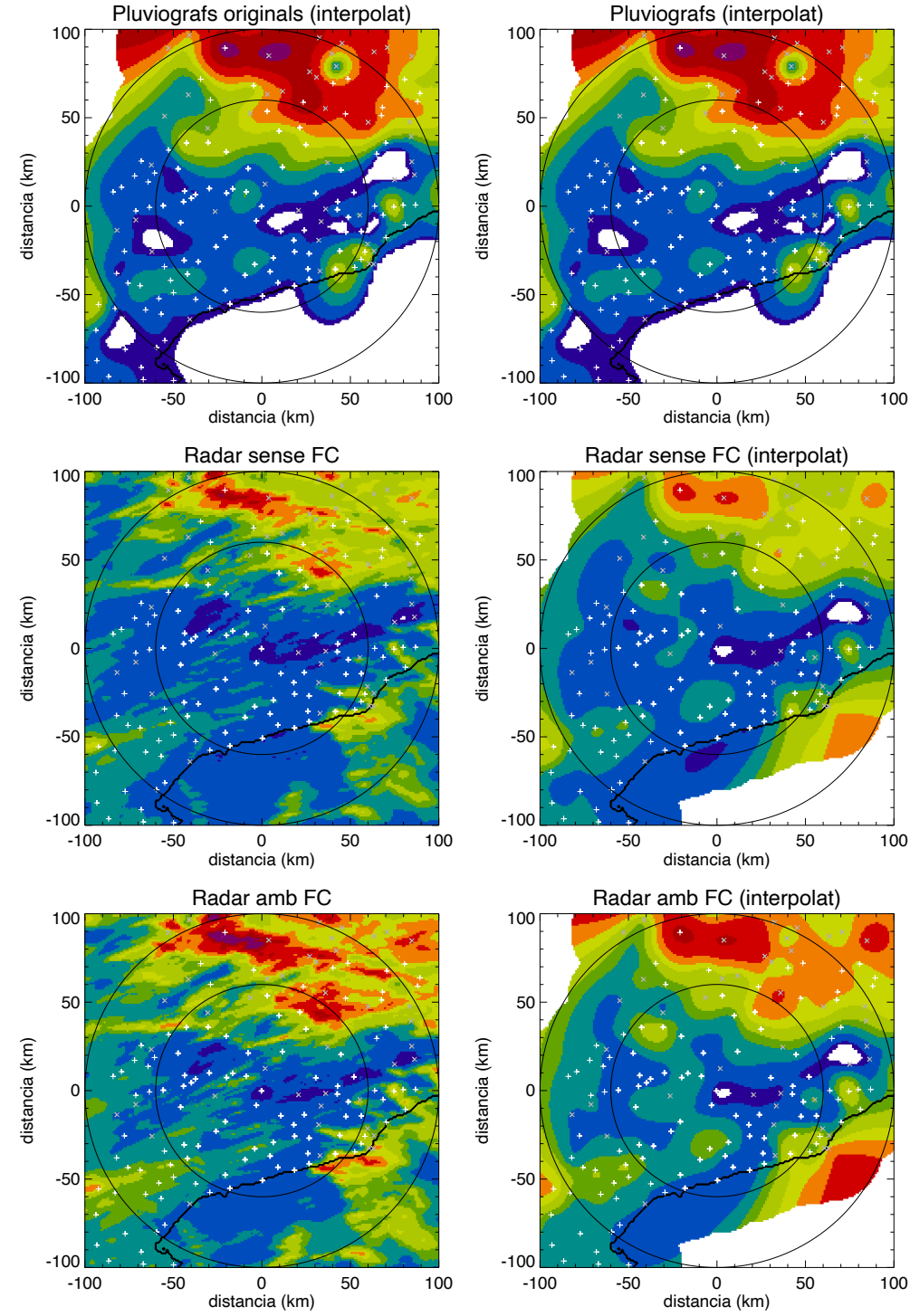


CDV: 20250723 – 20250724

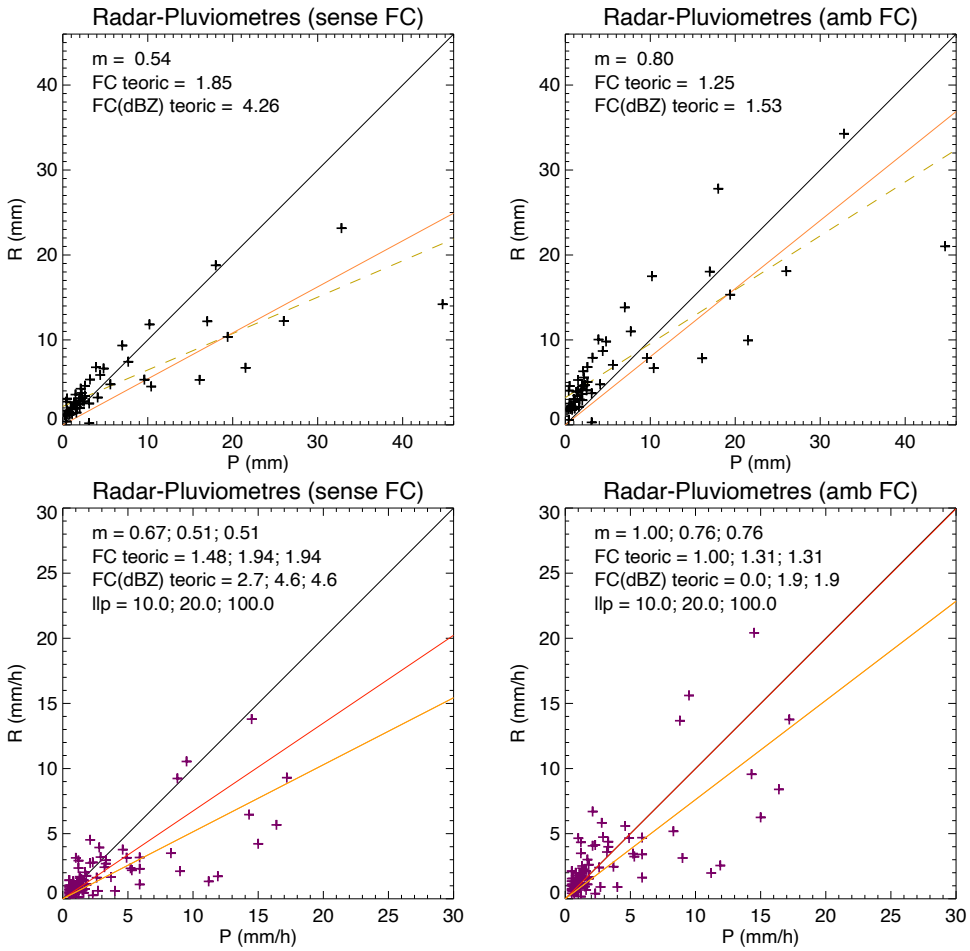


CDV: 20250818 – 20250820

lim= 200. fc aplicat= 1.48

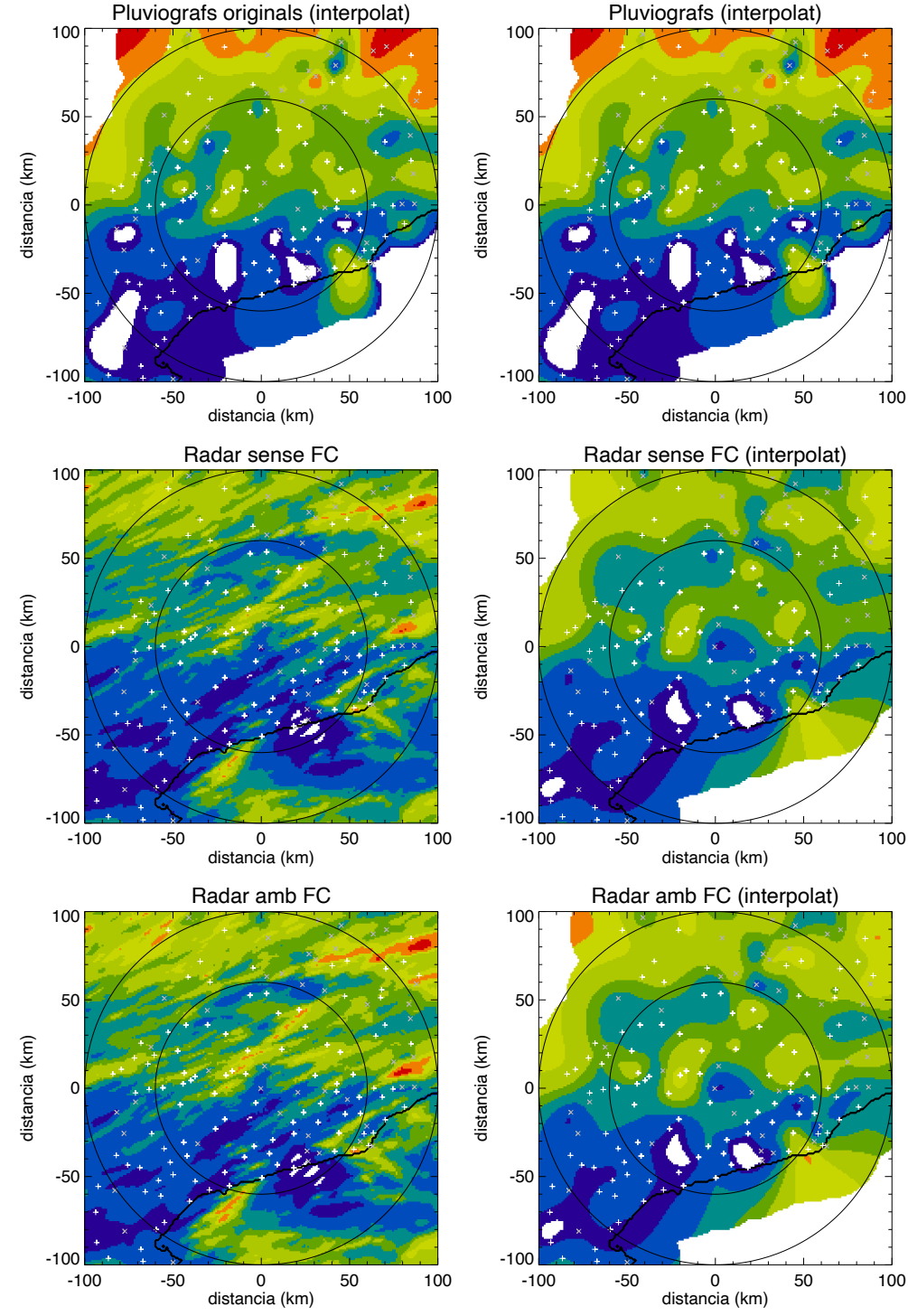


CDV: 20250818 – 20250820

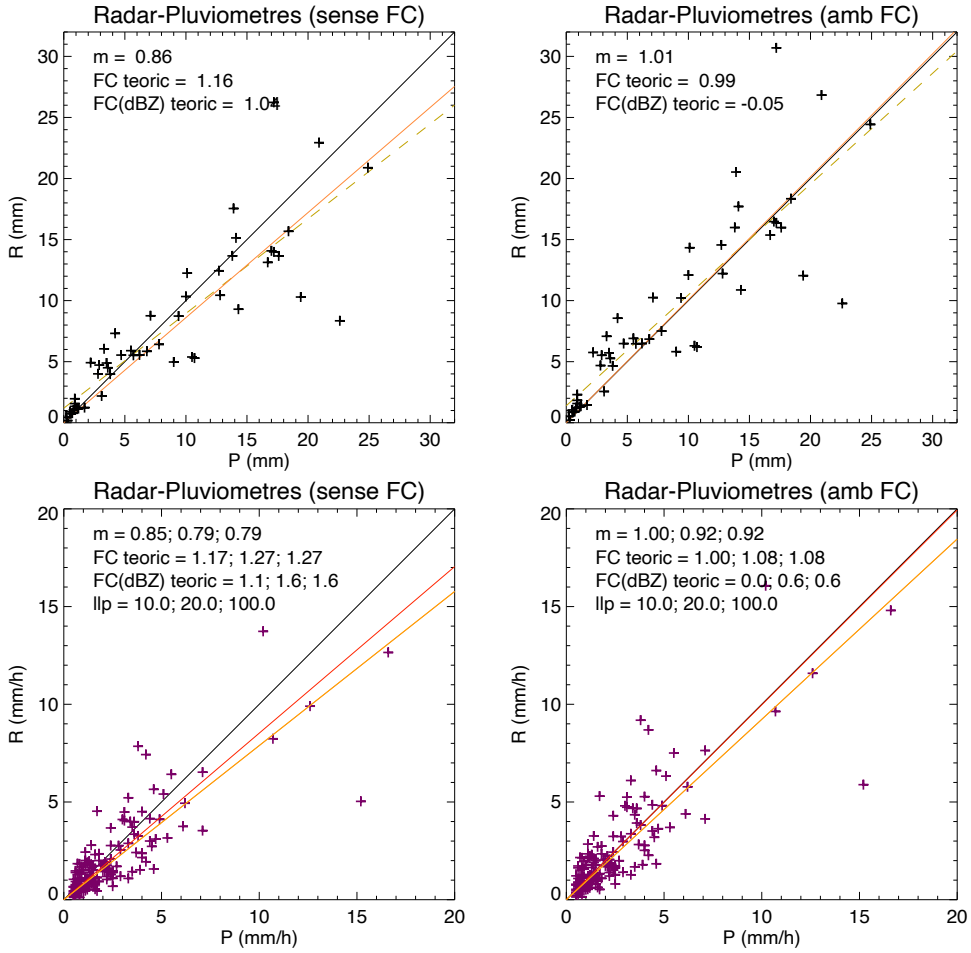


CDV: 20250827 – 20250829

lim= 200. fc aplicat= 1.17

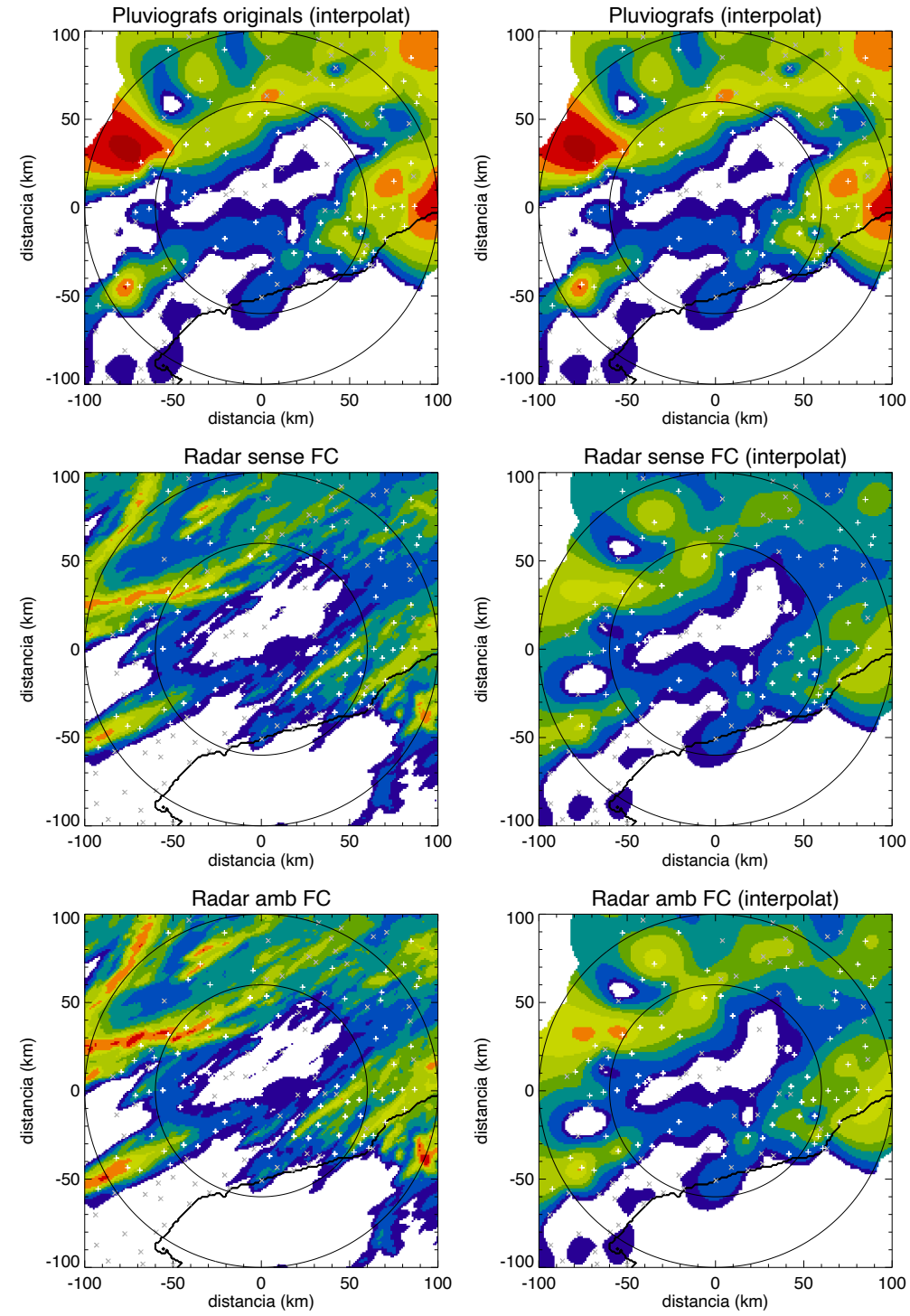


CDV: 20250827 – 20250829

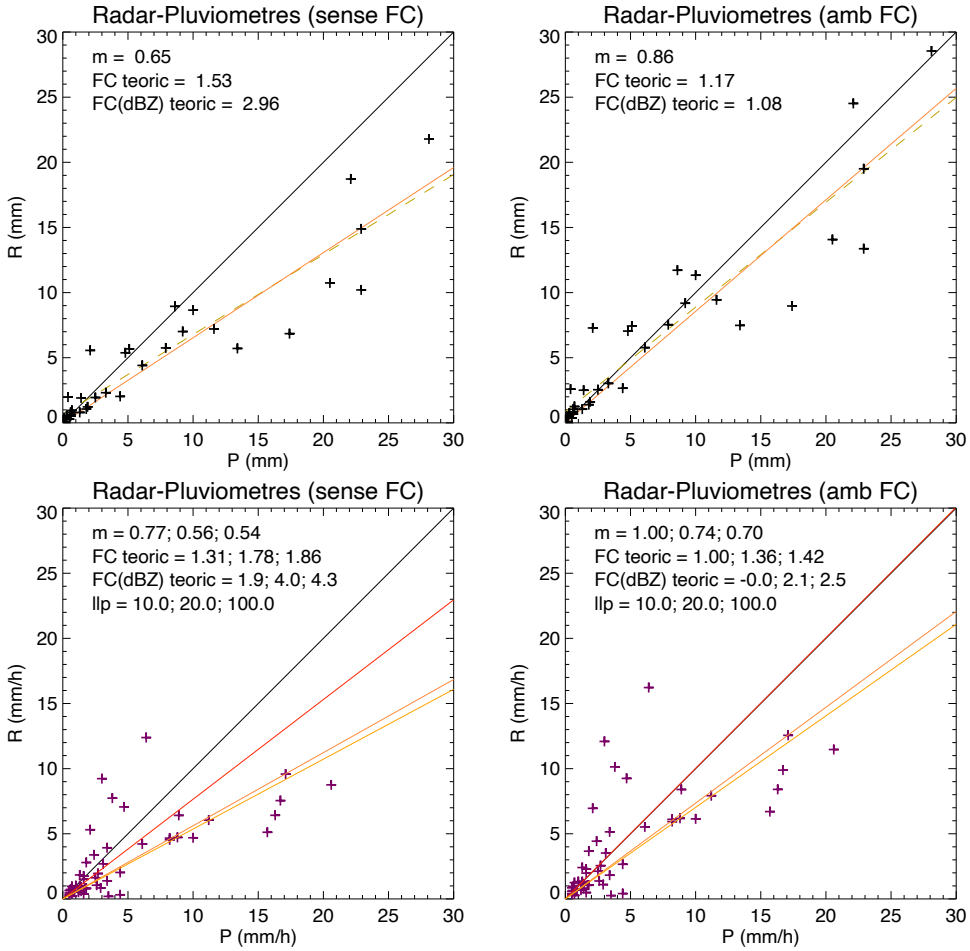


CDV: 20250831 – 20250901

lim= 200. fc aplicat= 1.31

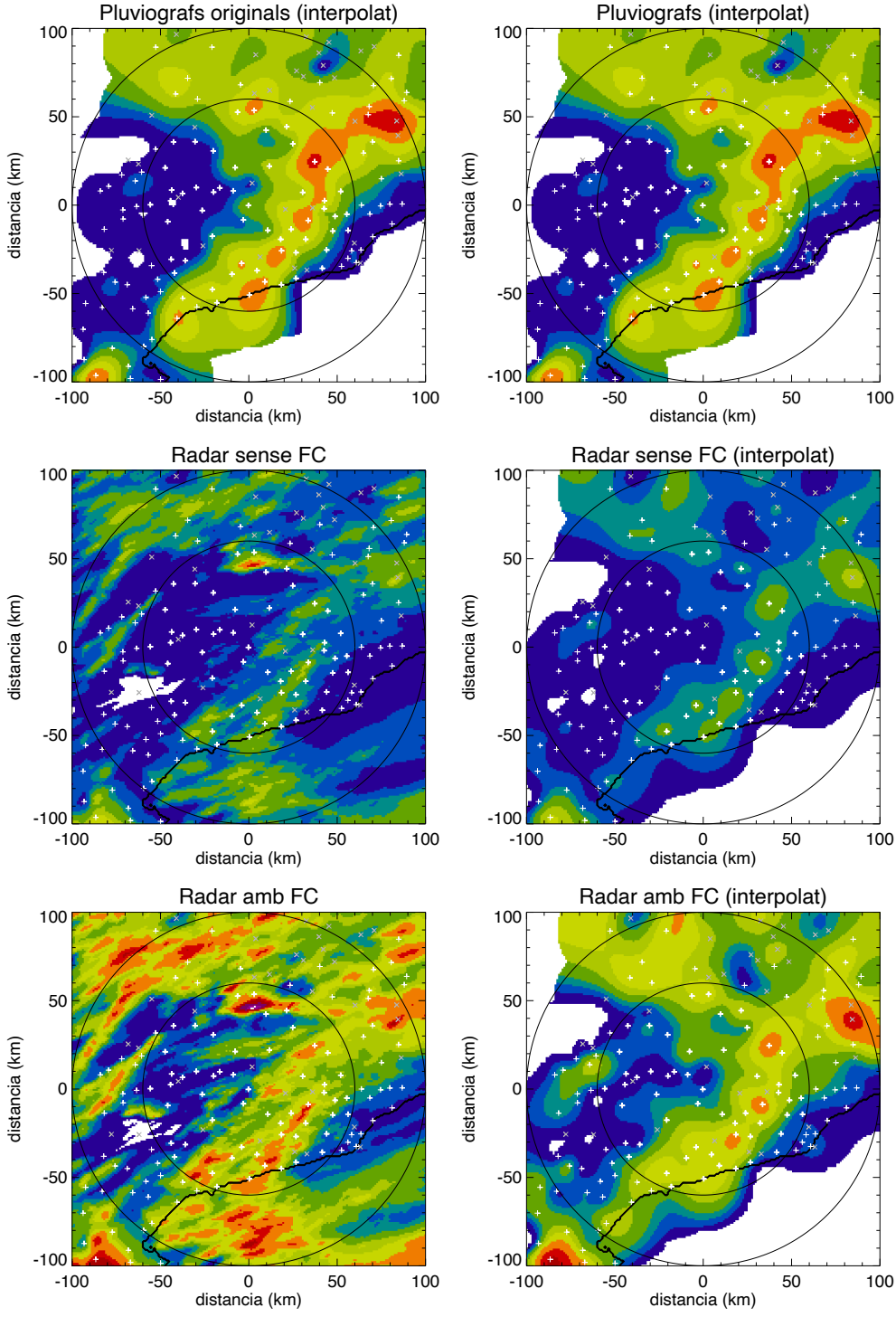


CDV: 20250831 – 20250901

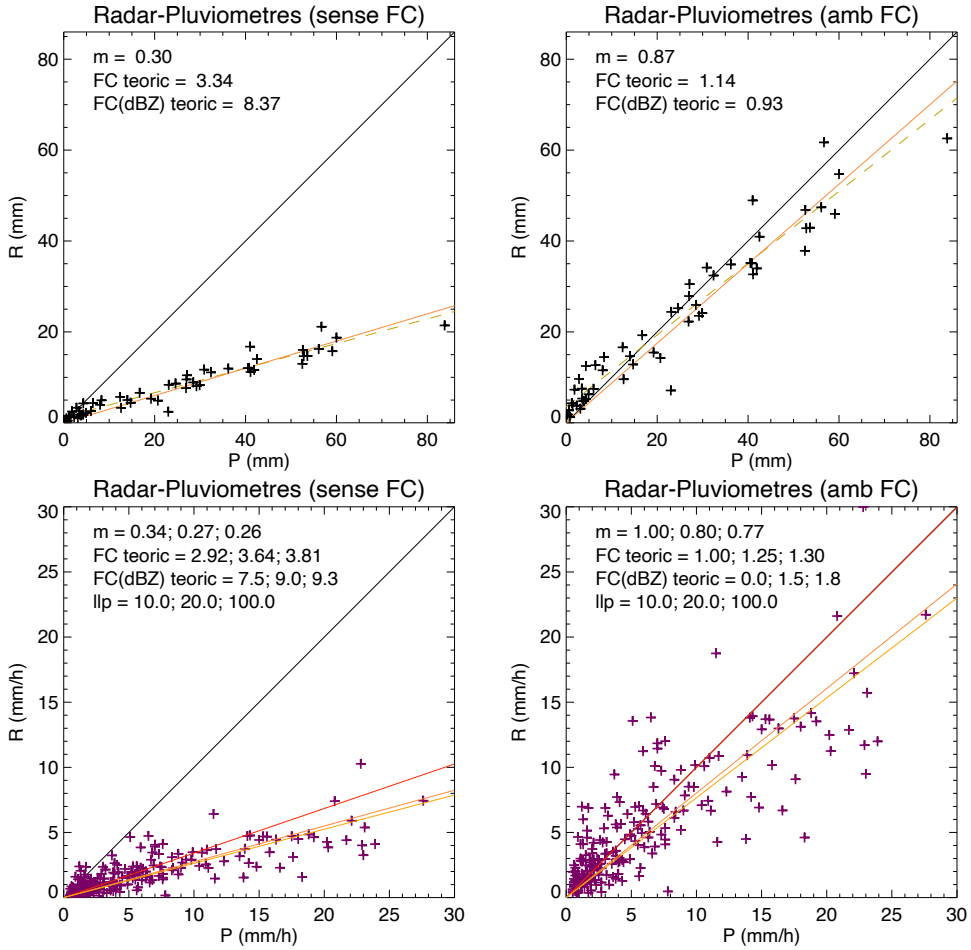


CDV: 20250908 – 20250909

lim= 250. fc aplicat= 2.92

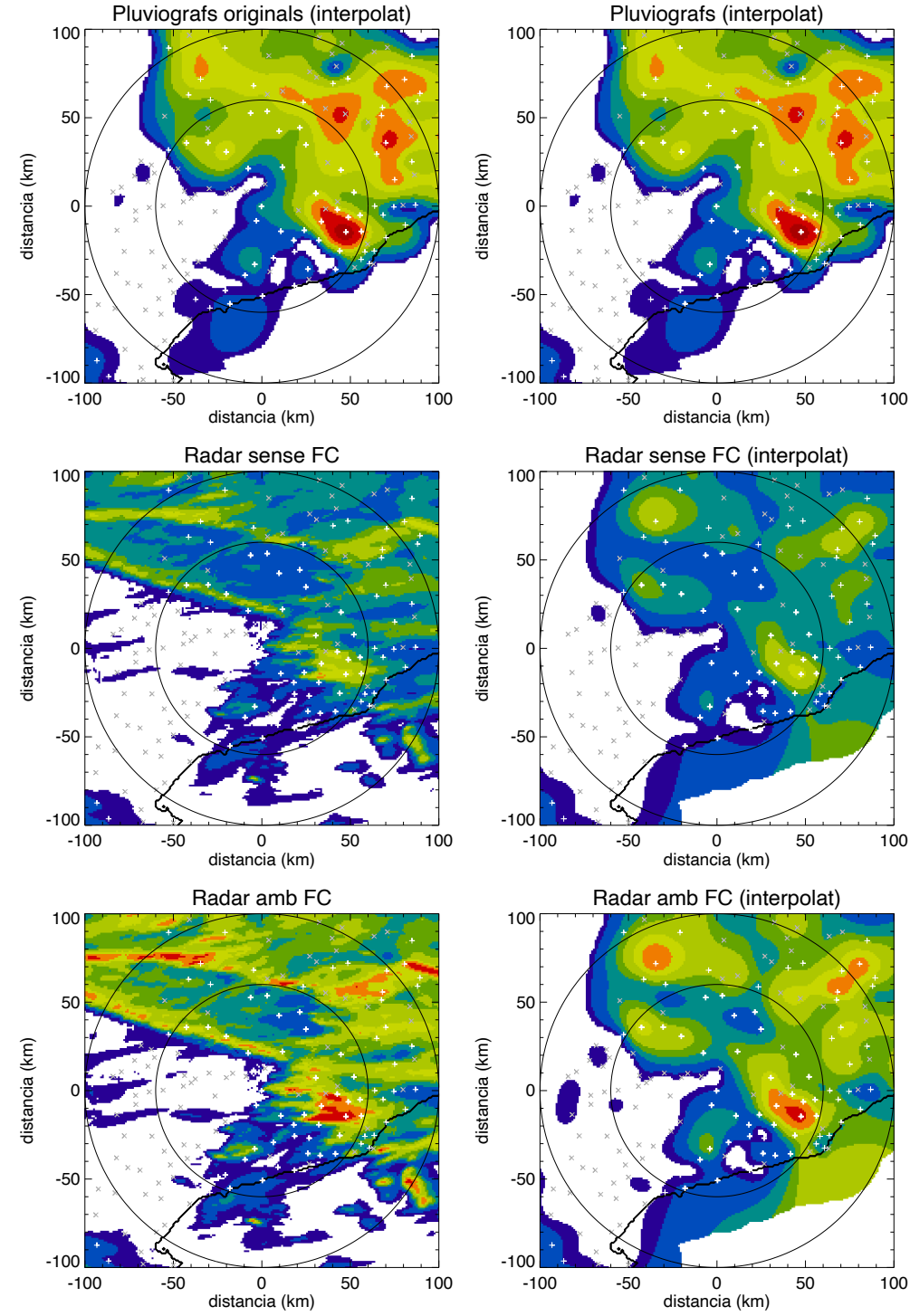


CDV: 20250908 – 20250909

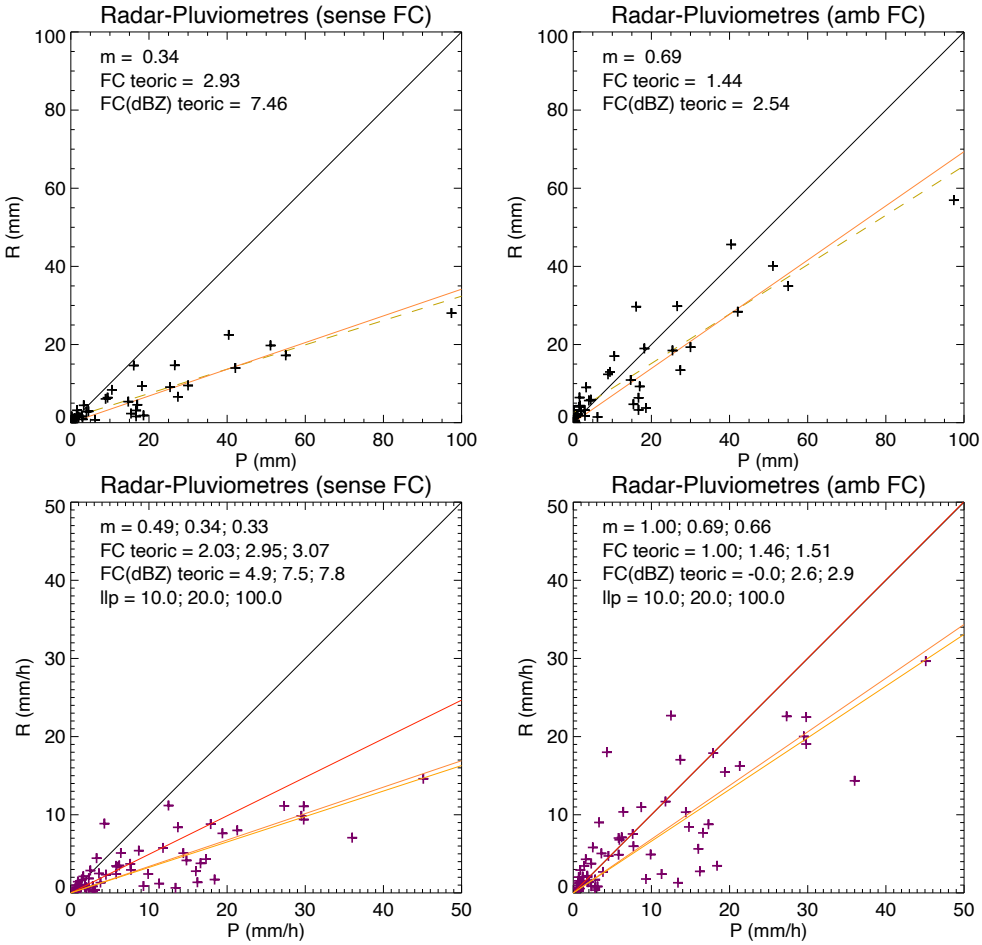


CDV: 20250912 – 20250913

lim= 200. fc aplicat= 2.03

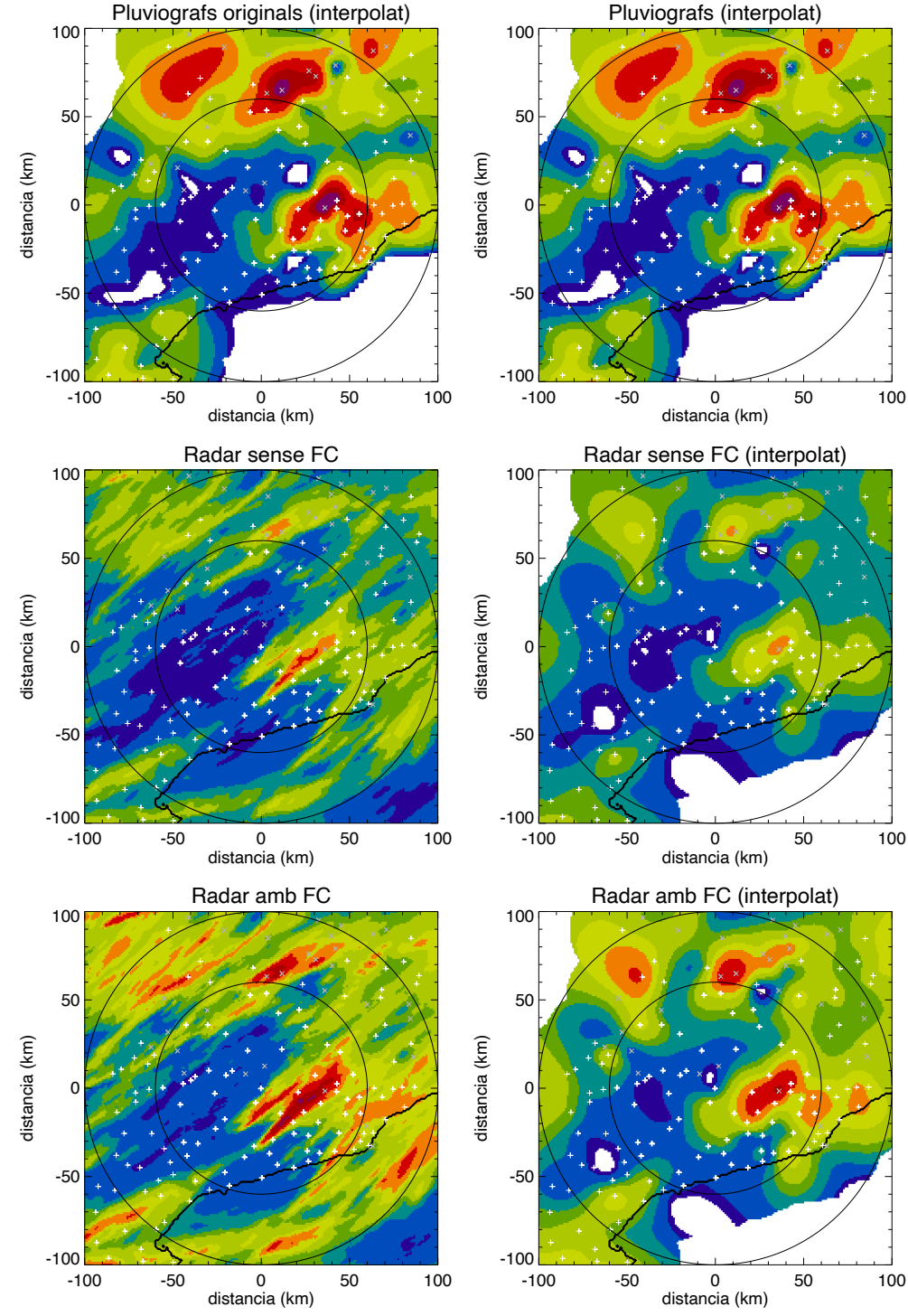


CDV: 20250912 – 20250913

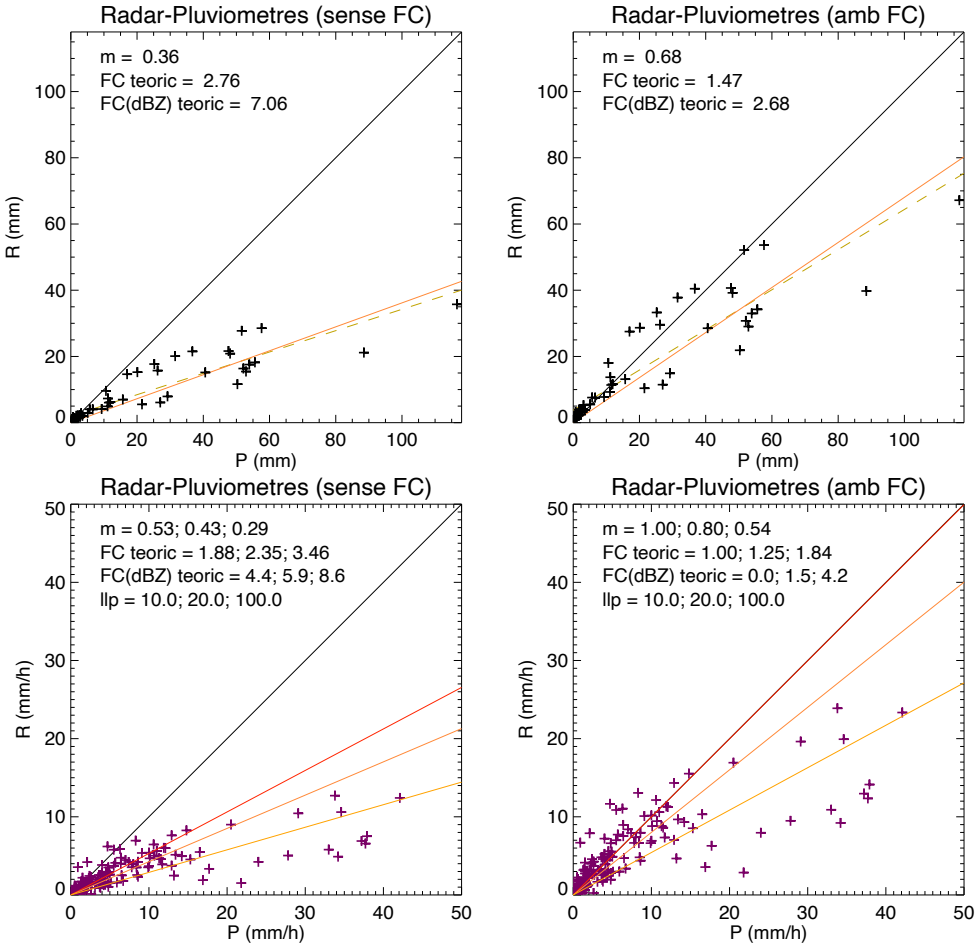


CDV: 20250921 – 20250921

lim= 200. fc aplicat= 1.88

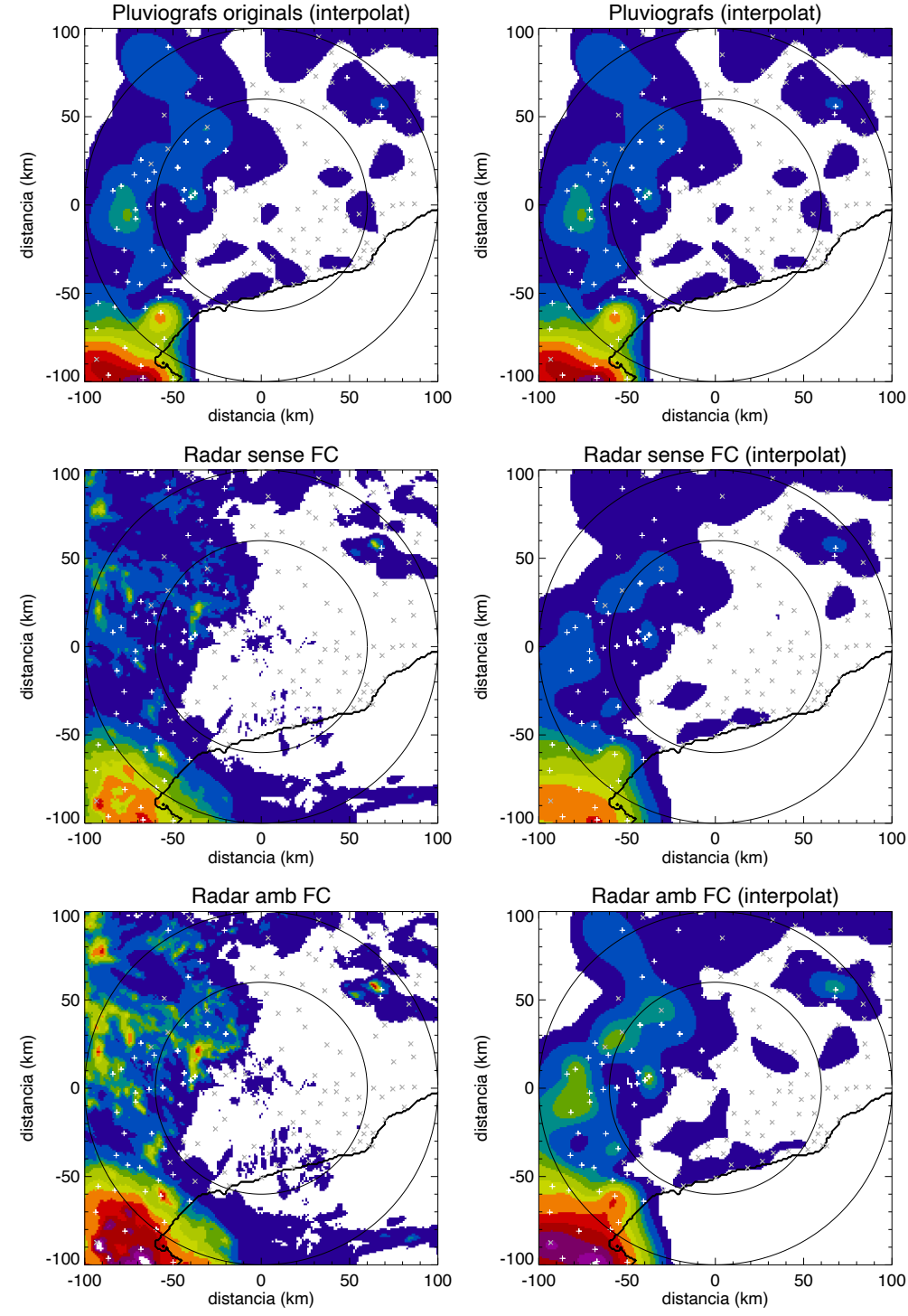


CDV: 20250921 – 20250921

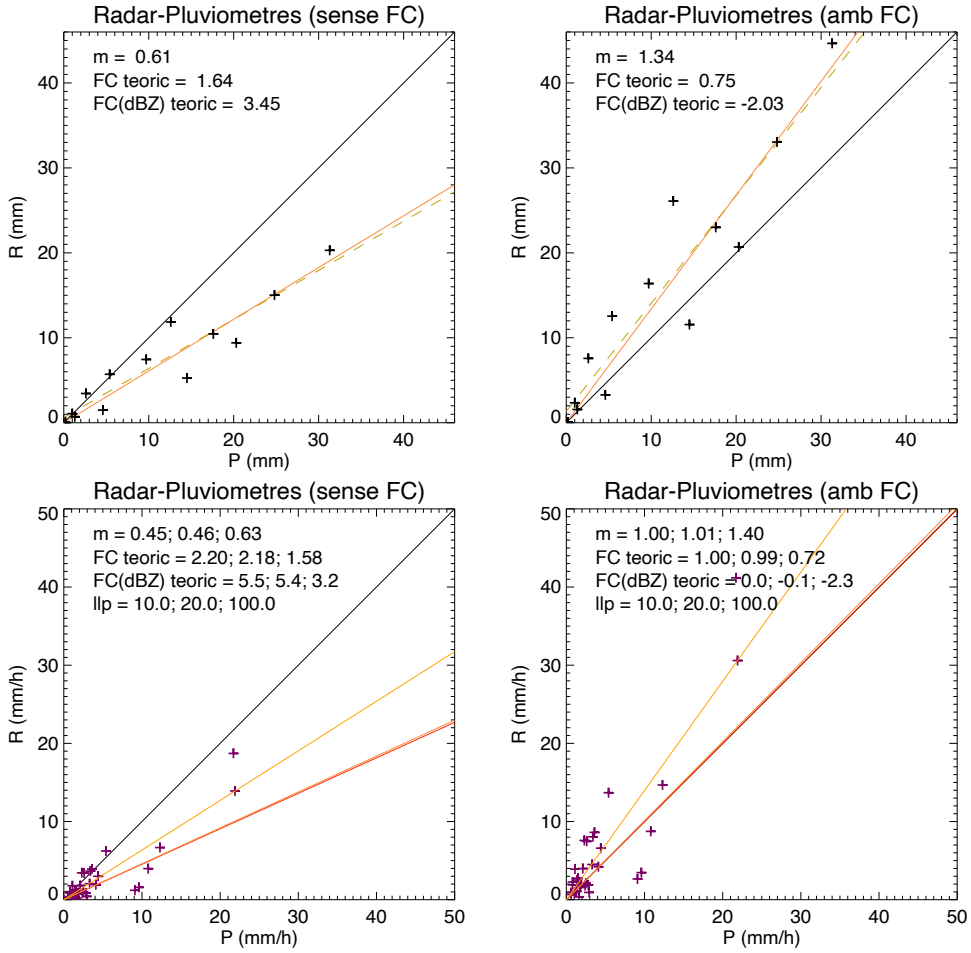


CDV: 20250928 – 20250929

lim= 350. fc aplicat= 2.20

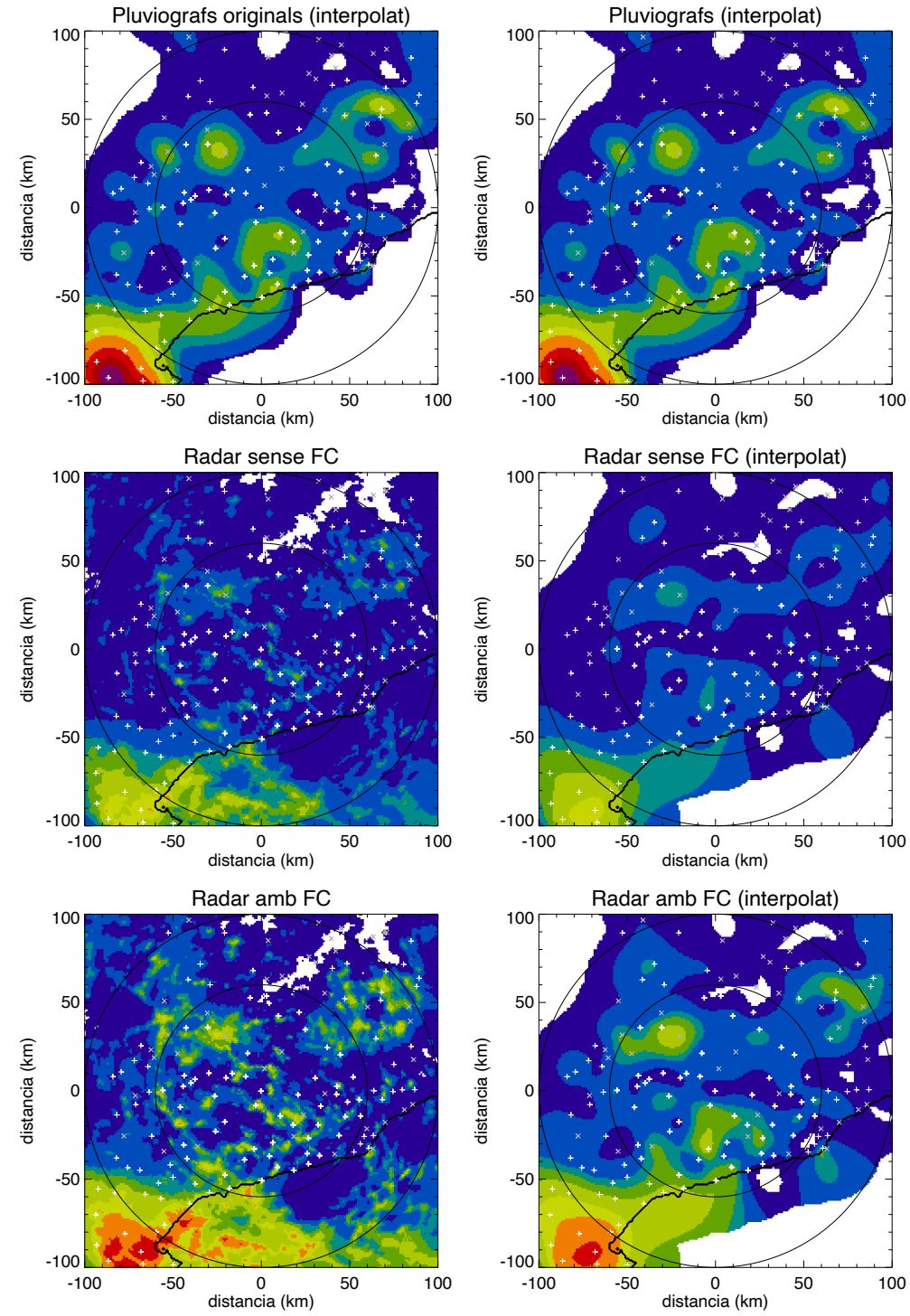


CDV: 20250928 – 20250929

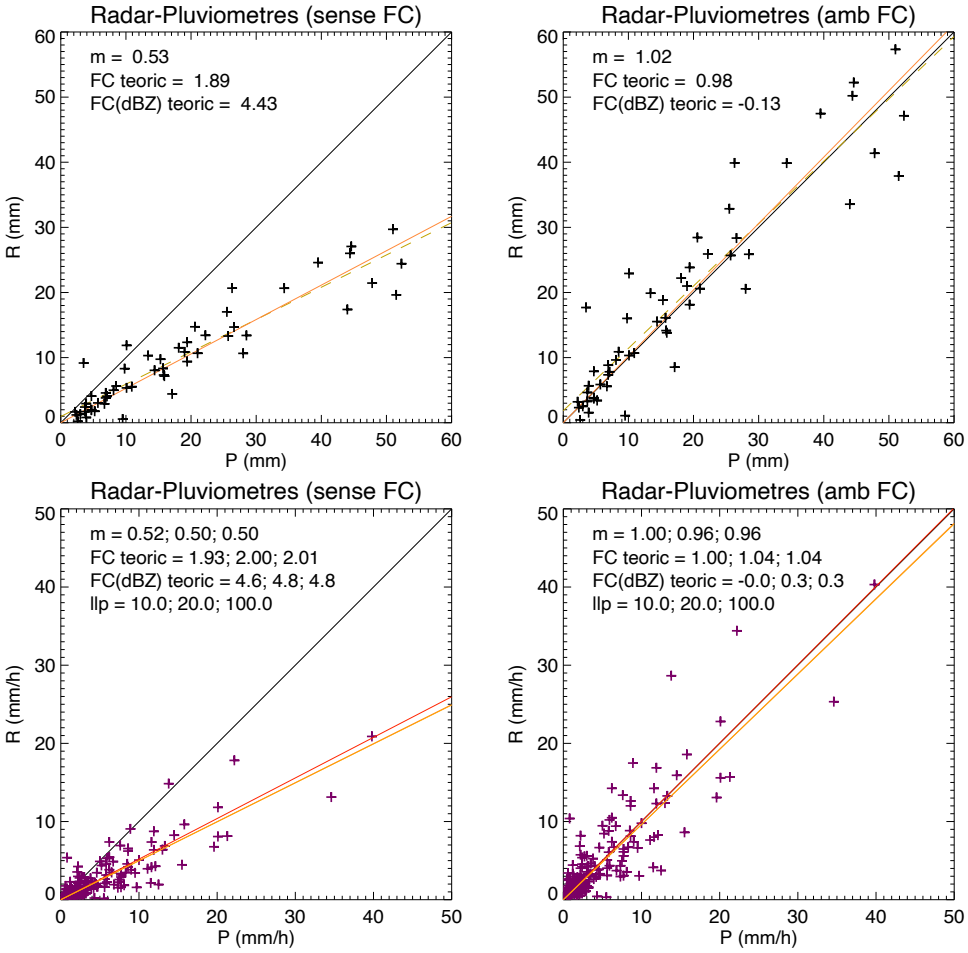


CDV: 20251011 – 20251016

lim= 350. fc aplicat= 1.93

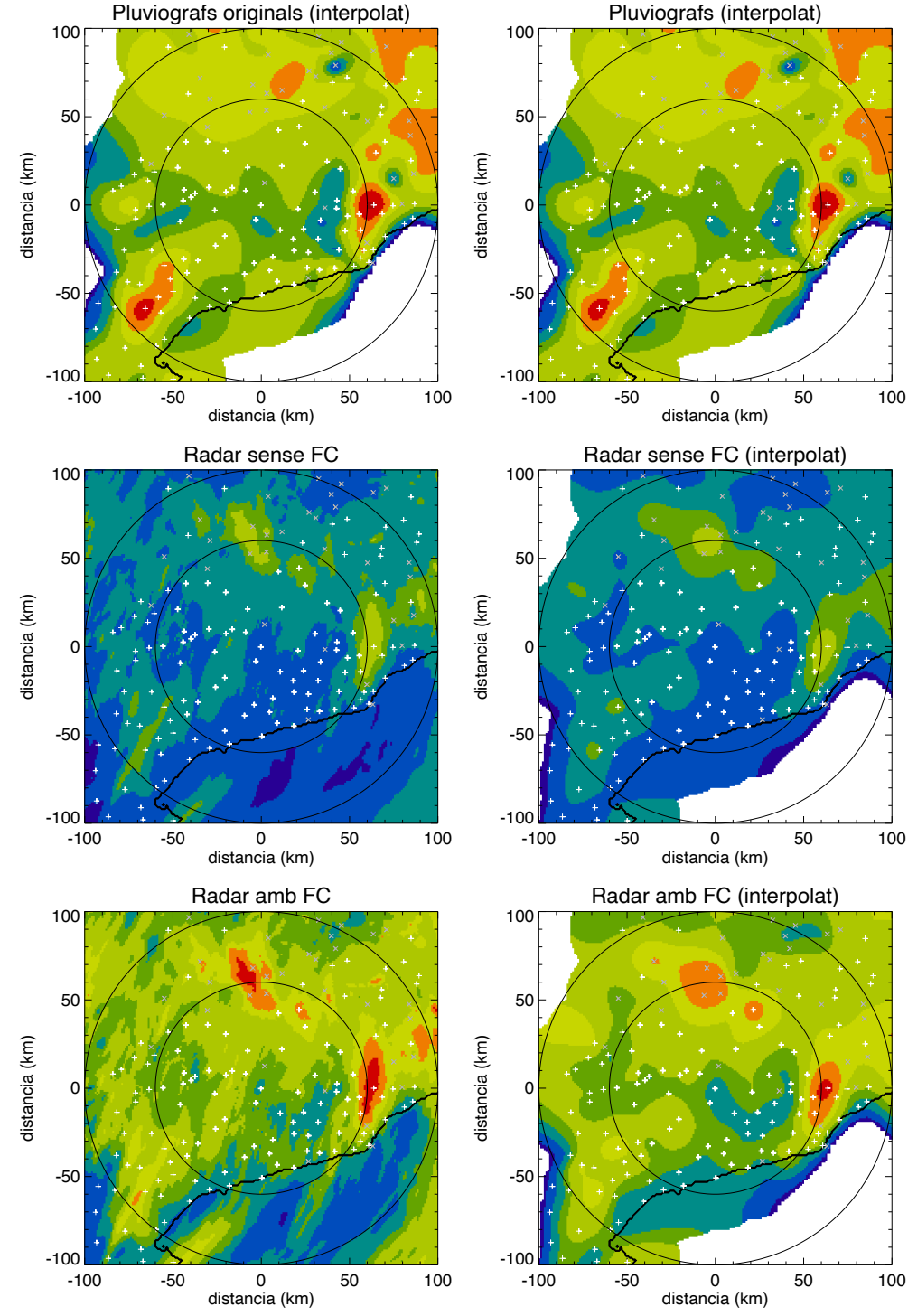


CDV: 20251011 – 20251016

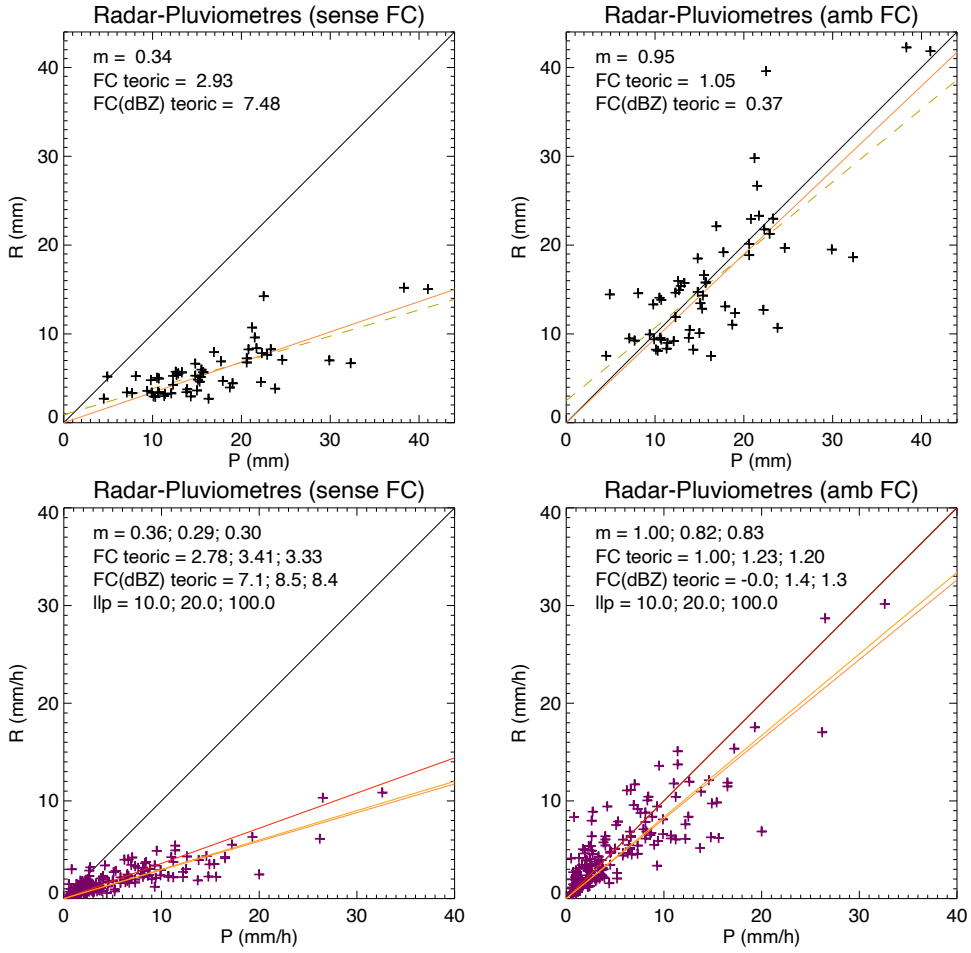


CDV: 20251106 – 20251106

lim= 200. fc aplicat= 2.78

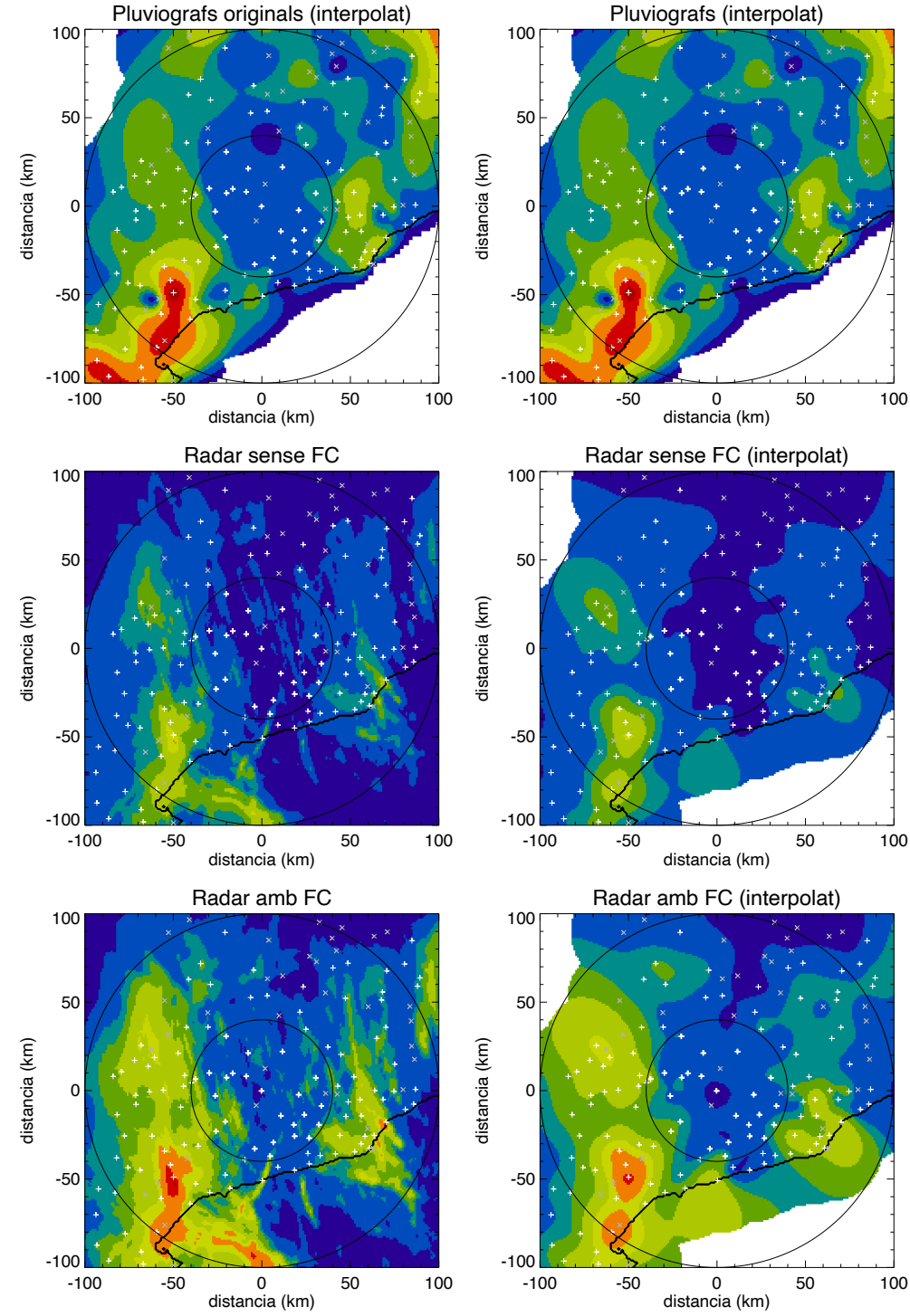


CDV: 20251106 – 20251106

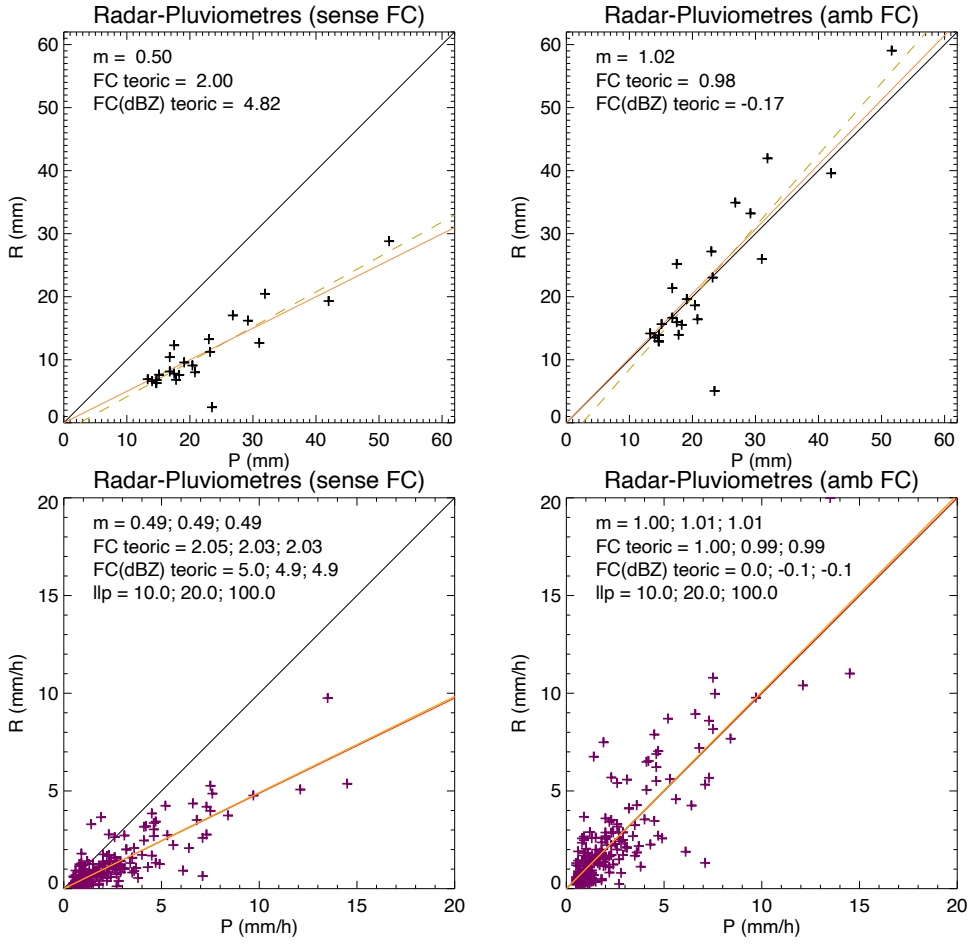


CDV: 20251214 – 20251217

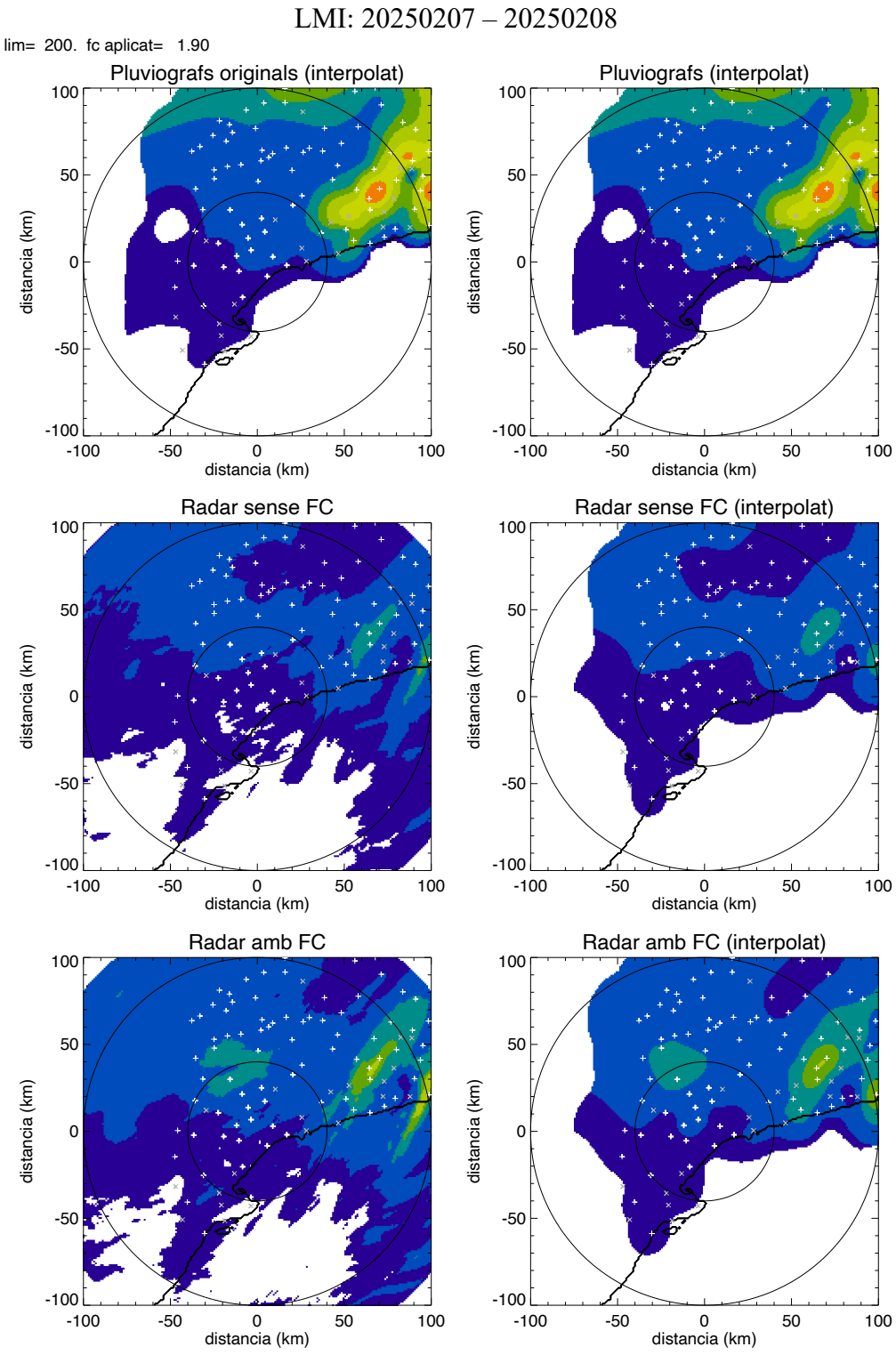
lim= 350. fc aplicat= 2.05



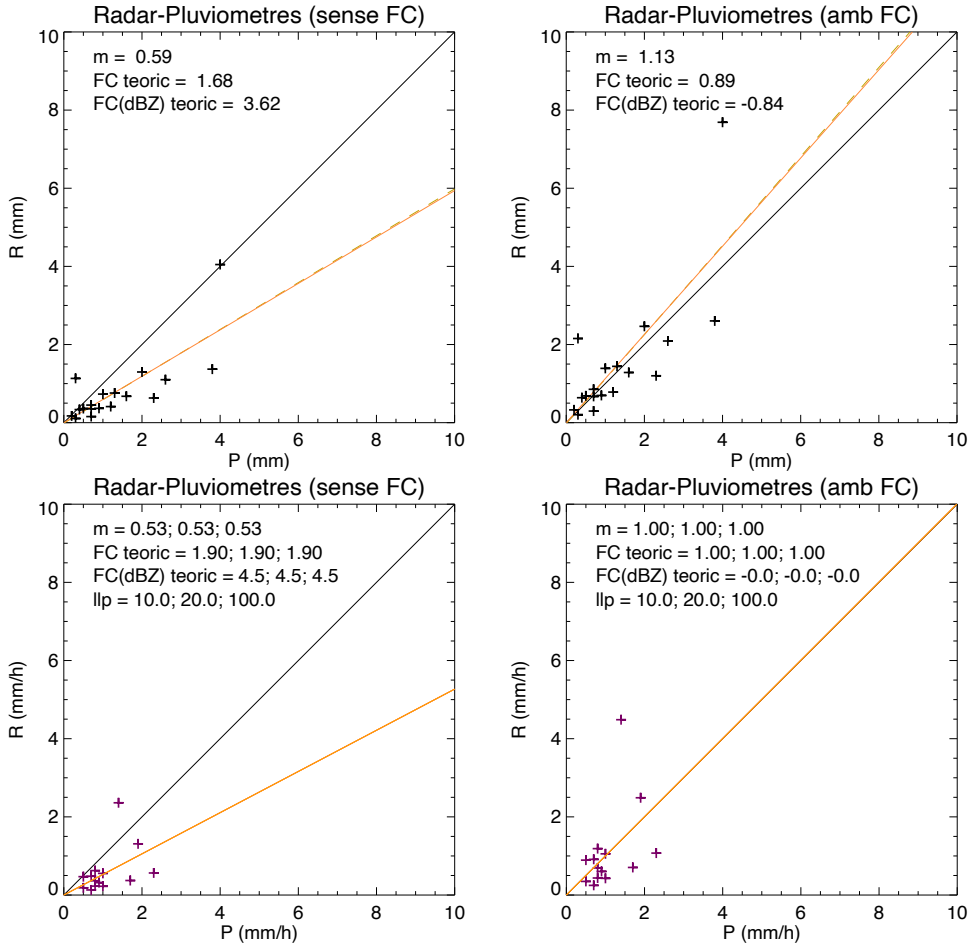
CDV: 20251214 – 20251217

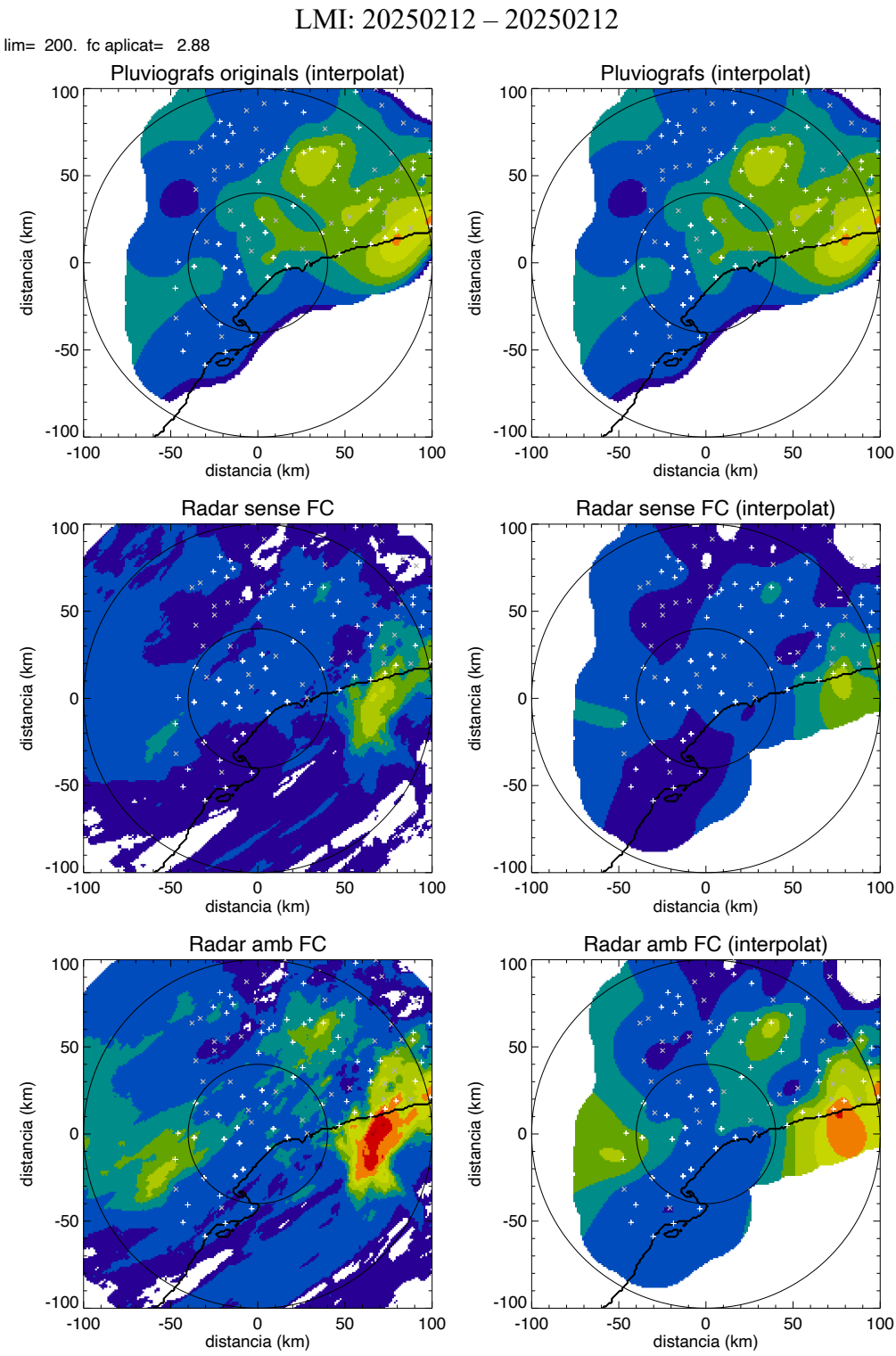


Radar LMI

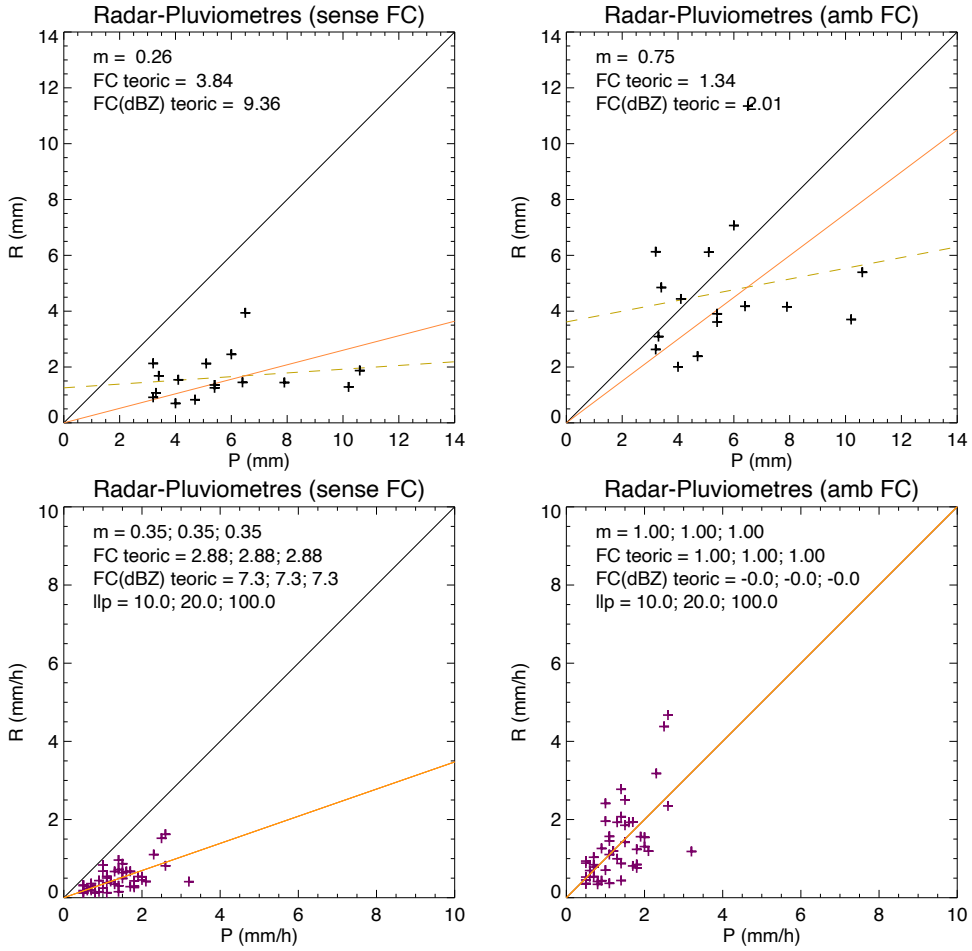

LMI: 20250207 – 20250208
lim= 200. fc aplicat= 1.90
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
100
50
0
-50
-100

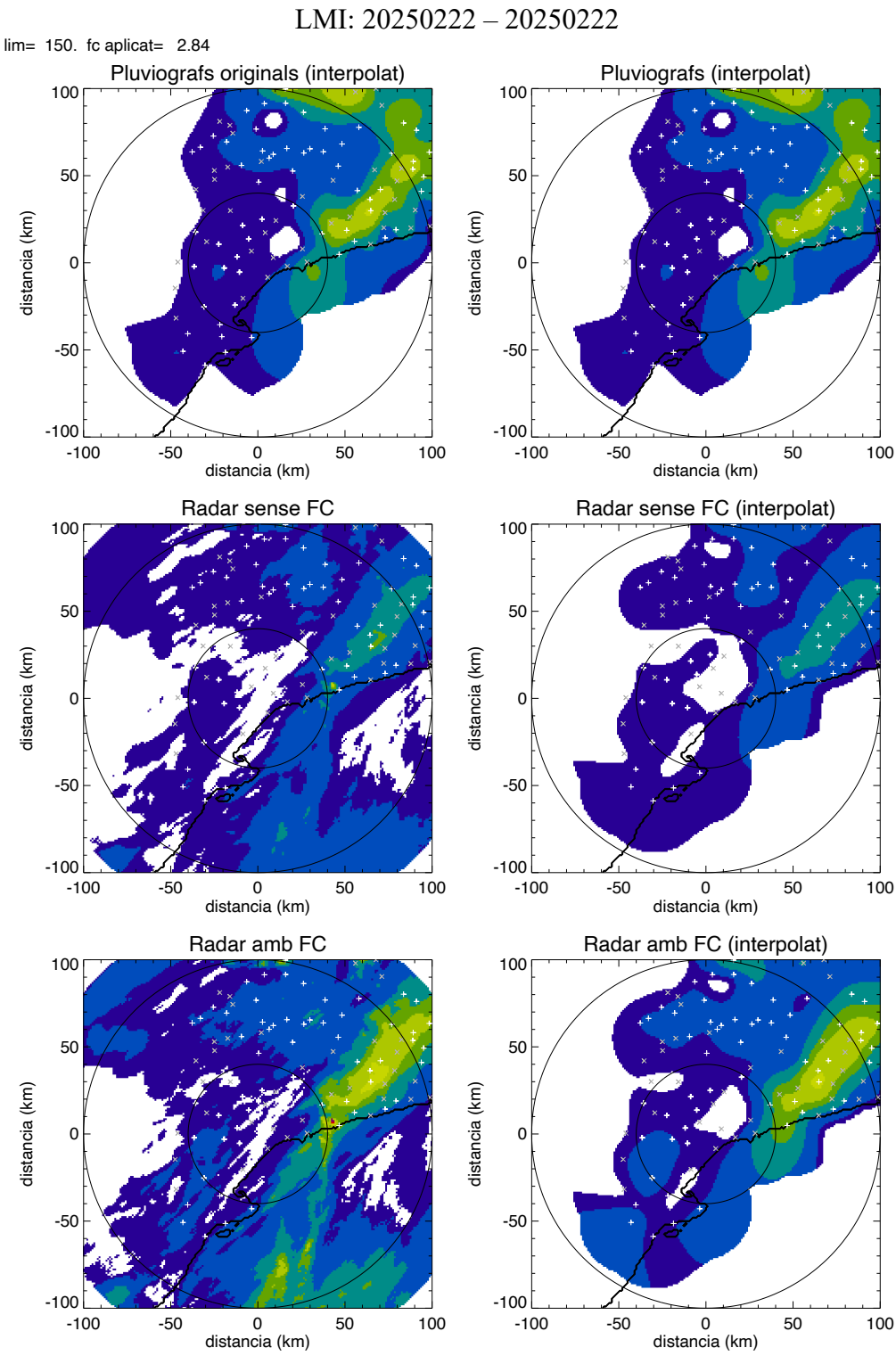
LMI: 20250207 – 20250208



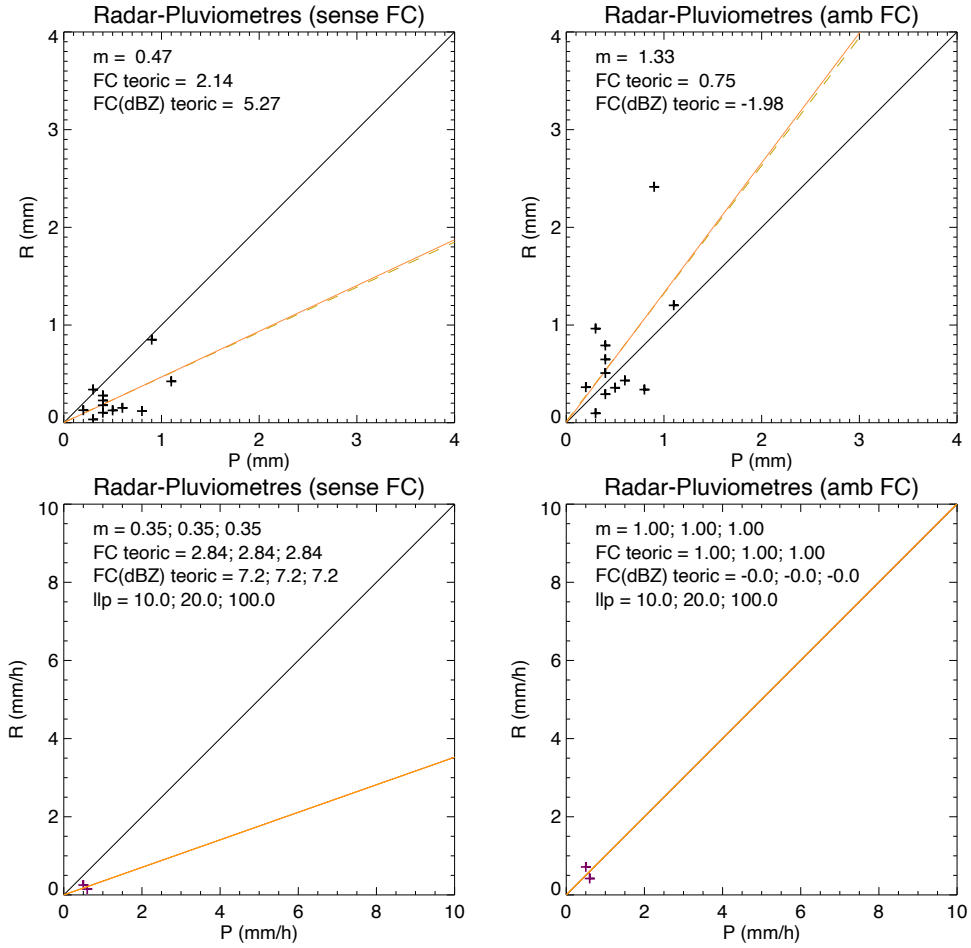

LMI: 20250212 – 20250212
lim= 200. fc aplicat= 2.88
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
100
50
0
-50
-100

LMI: 20250212 – 20250212



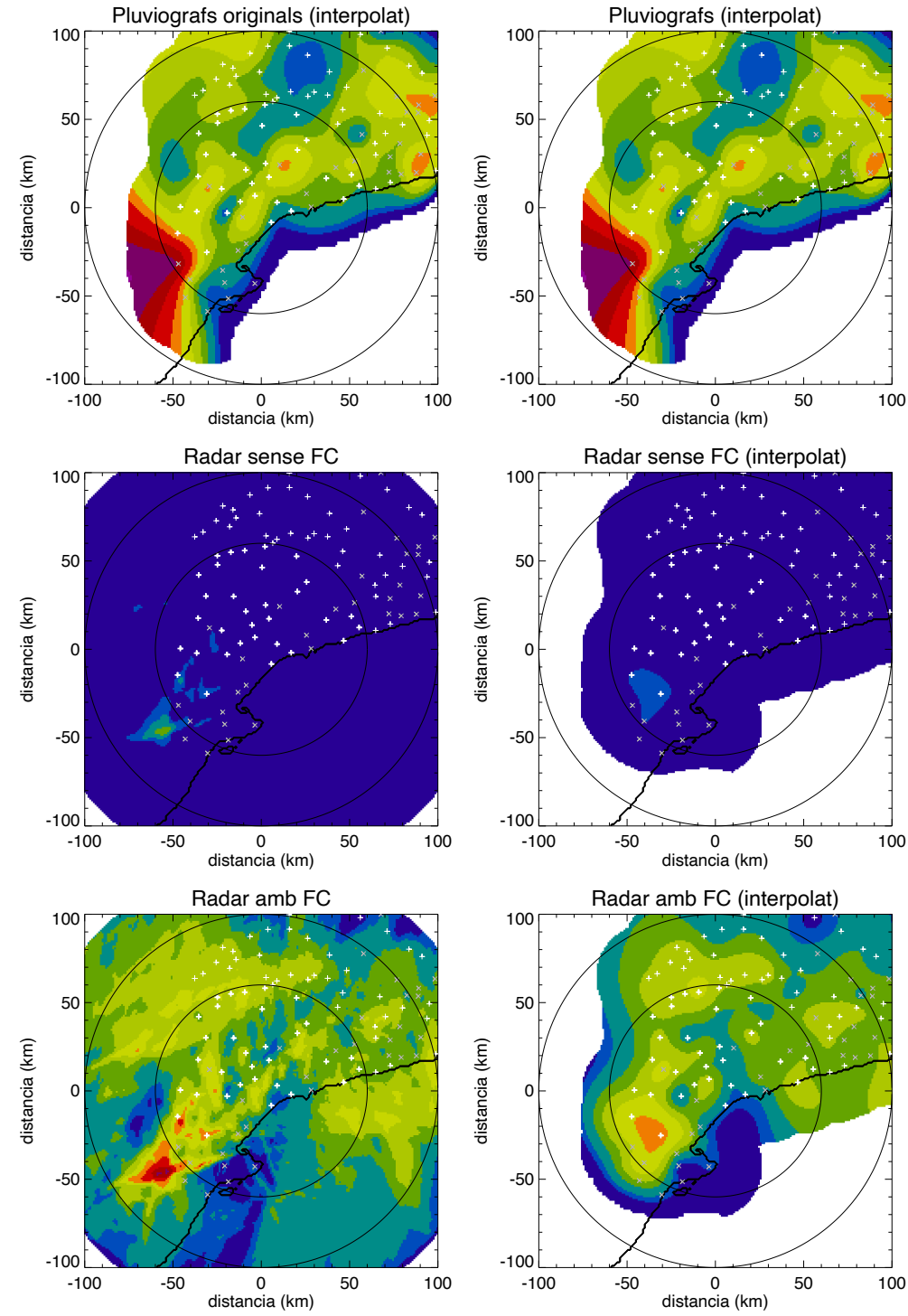

LMI: 20250222 – 20250222
lim= 150. fc aplicat= 2.84
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
distancia (km)
100
50
0
-50
-100

LMI: 20250222 – 20250222

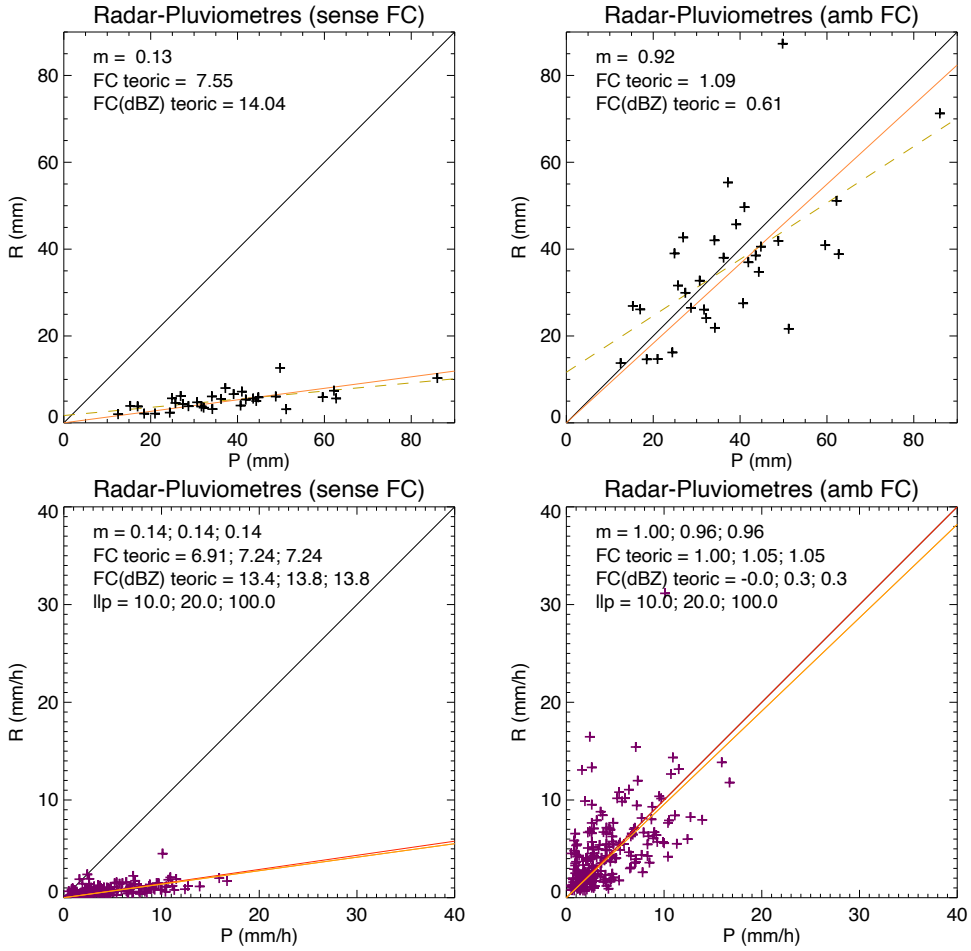


LMI: 20250306 – 20250309

lim= 300. fc aplicat= 6.91

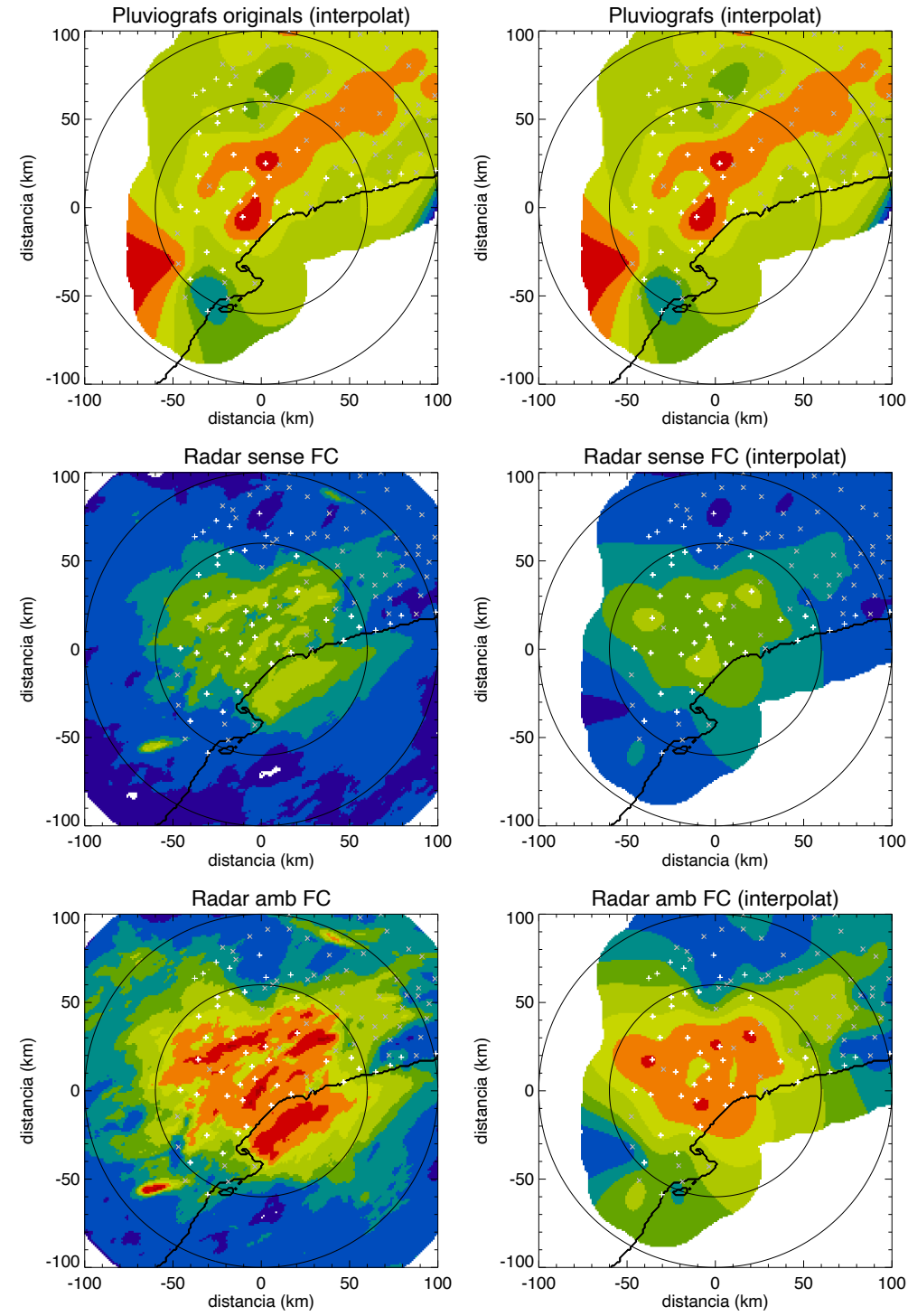


LMI: 20250306 – 20250309

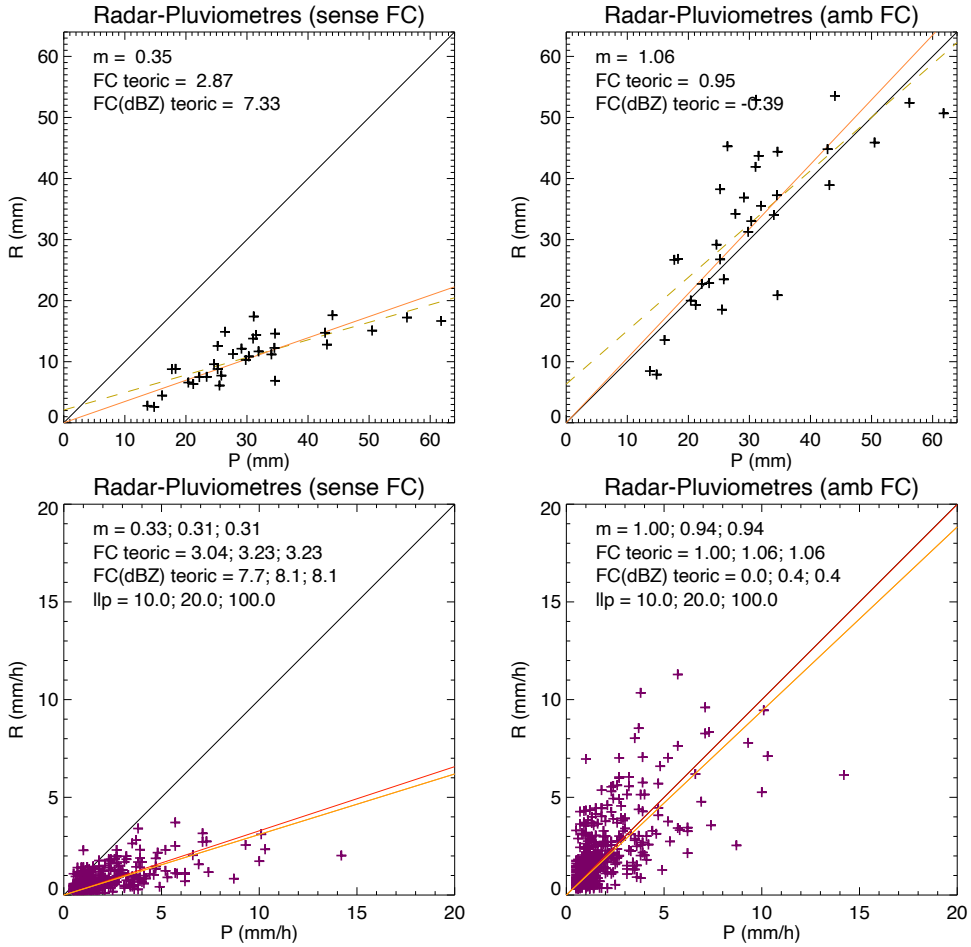


LMI: 20250311 – 20250314

lim= 200. fc aplicat= 3.04

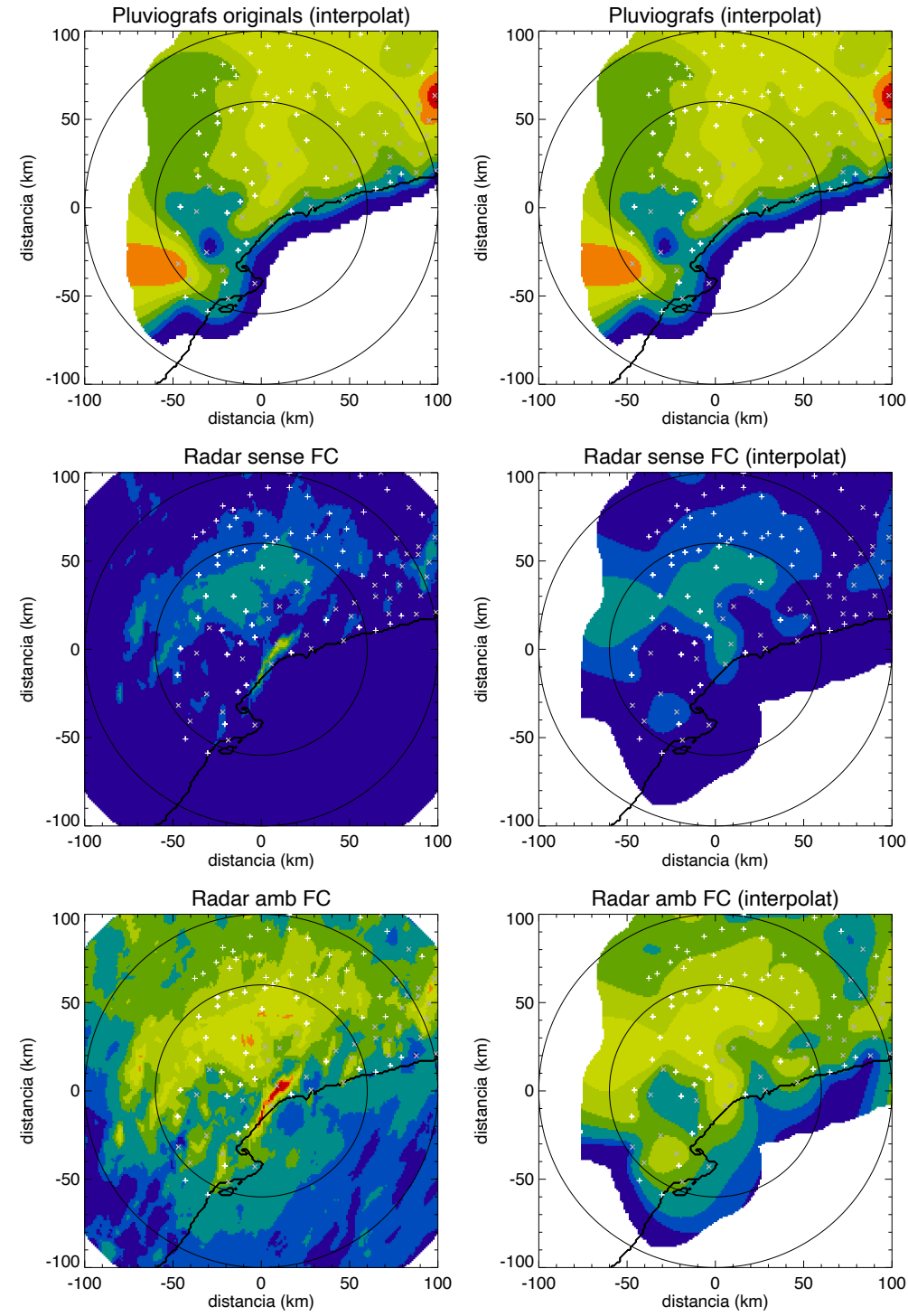


LMI: 20250311 – 20250314

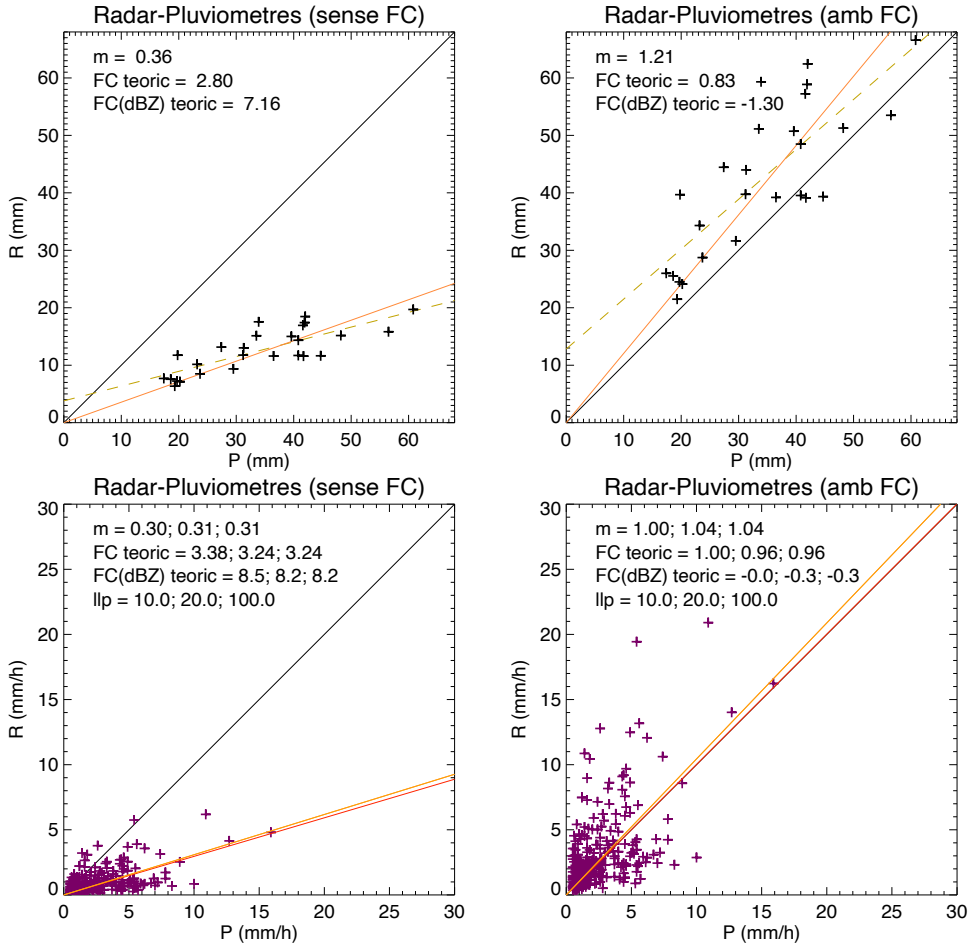


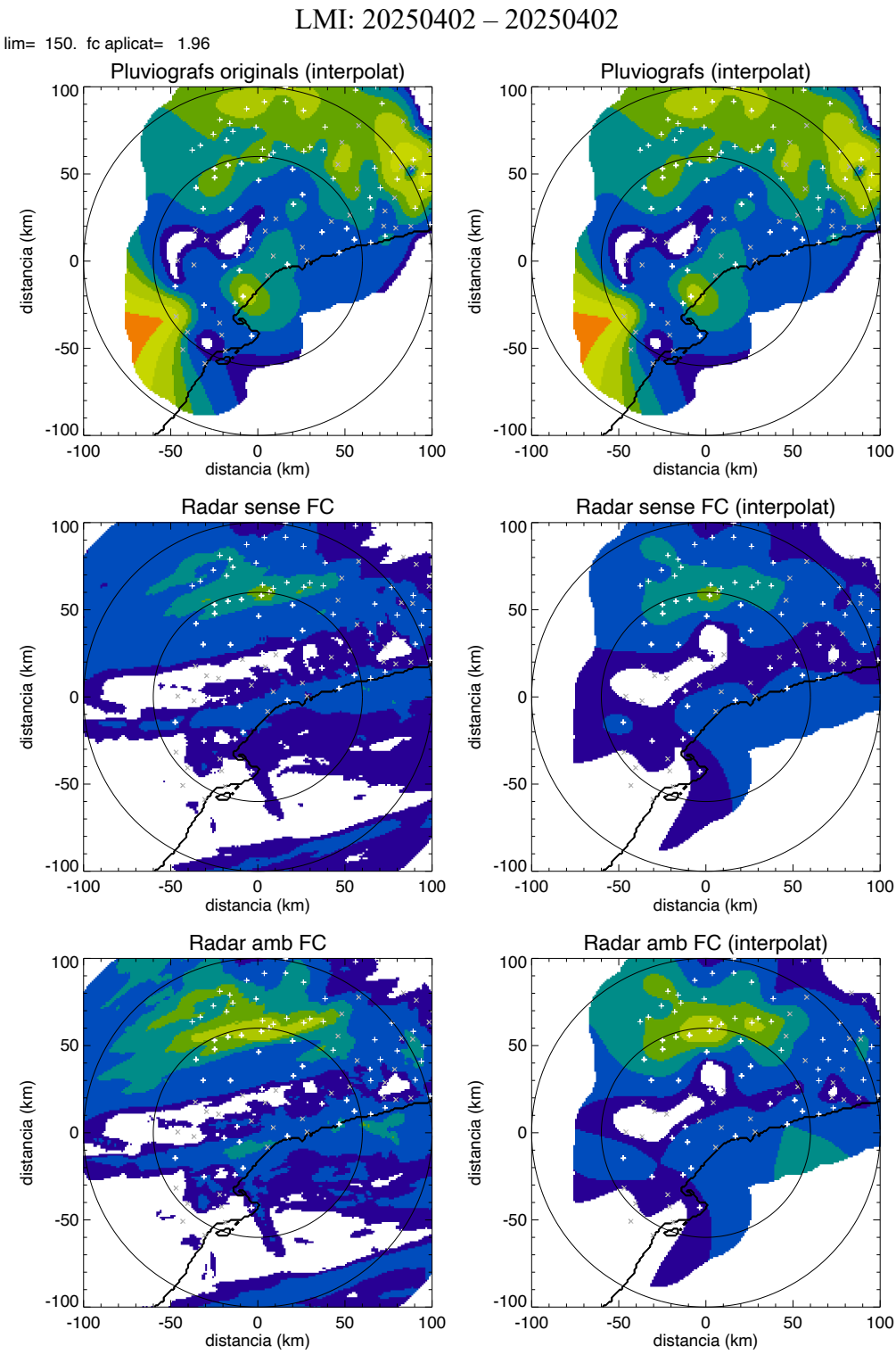
LMI: 20250318 – 20250325

lim= 300. fc aplicat= 3.38

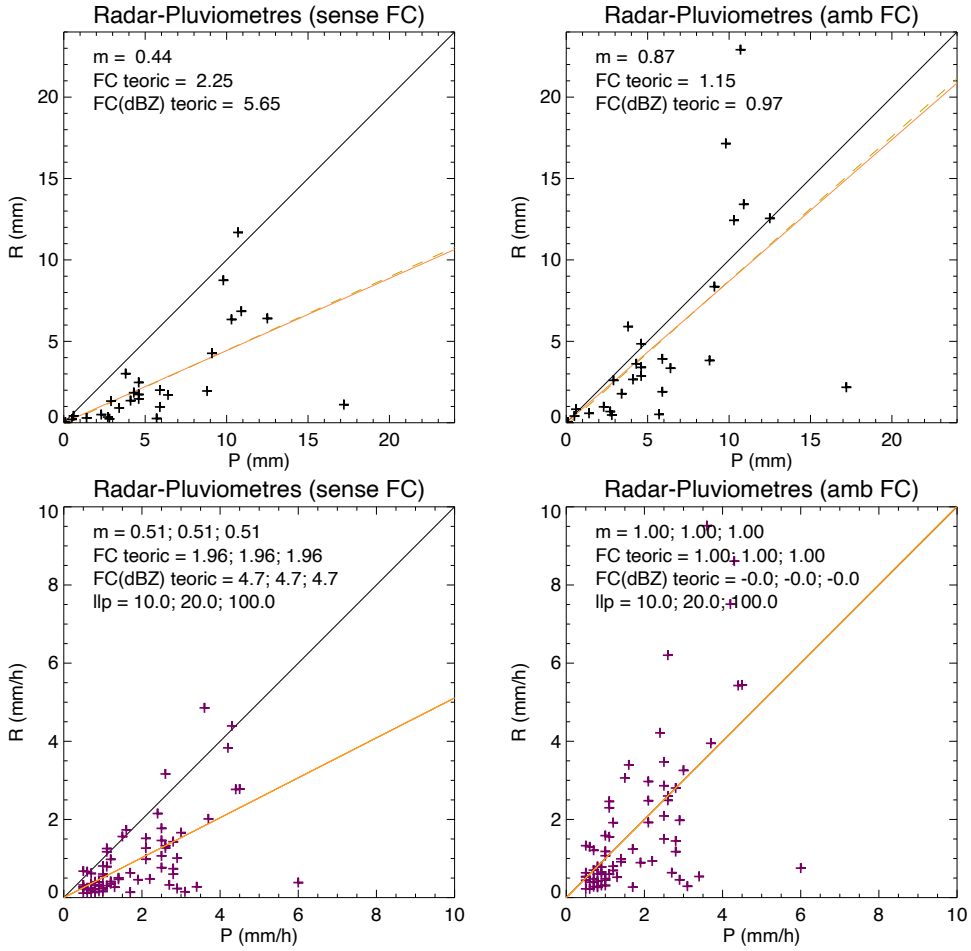


LMI: 20250318 – 20250325



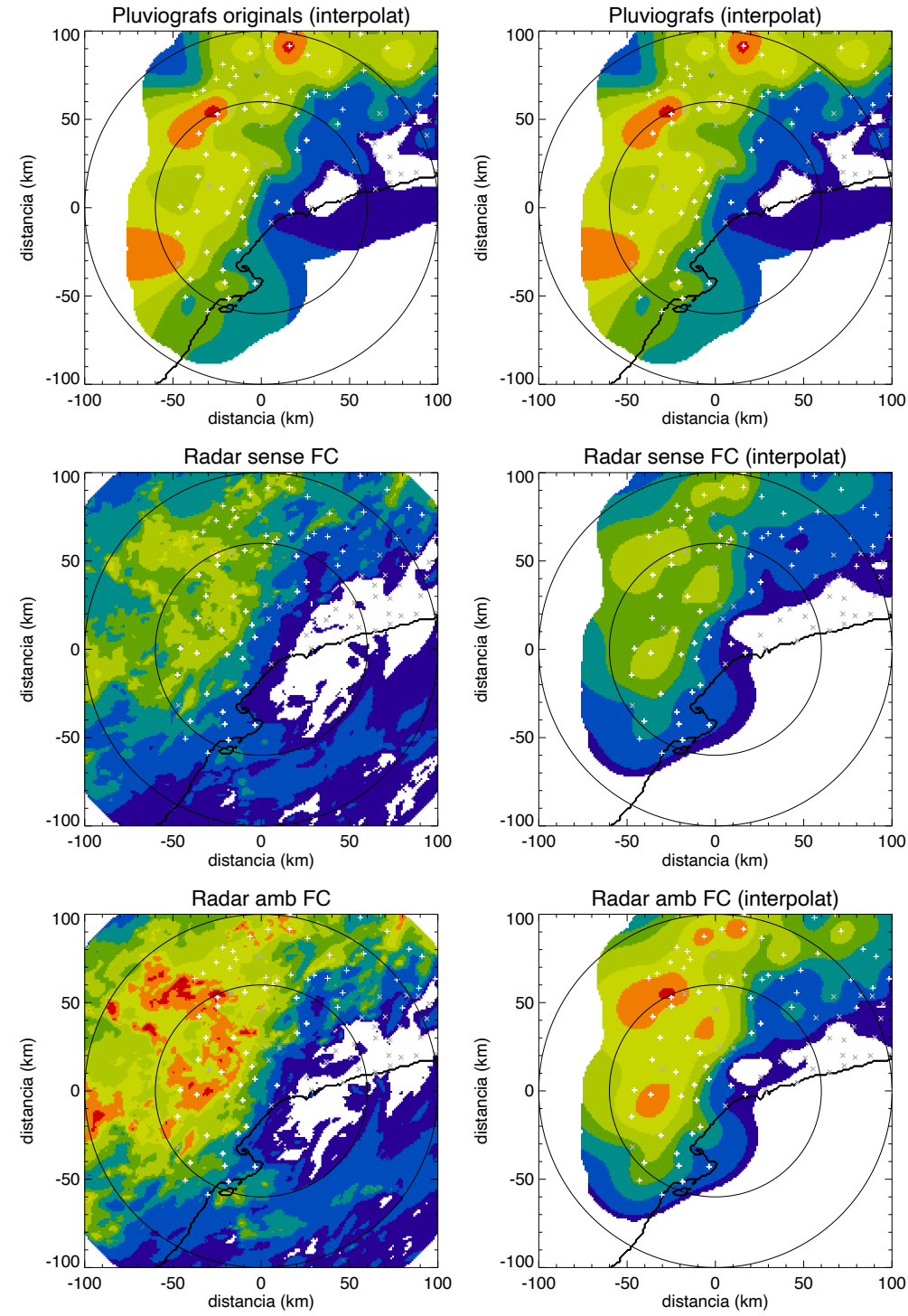

LMI: 20250402 – 20250402
lim= 150. fc aplicat= 1.96
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
-100
-50
0
50
100

LMI: 20250402 – 20250402

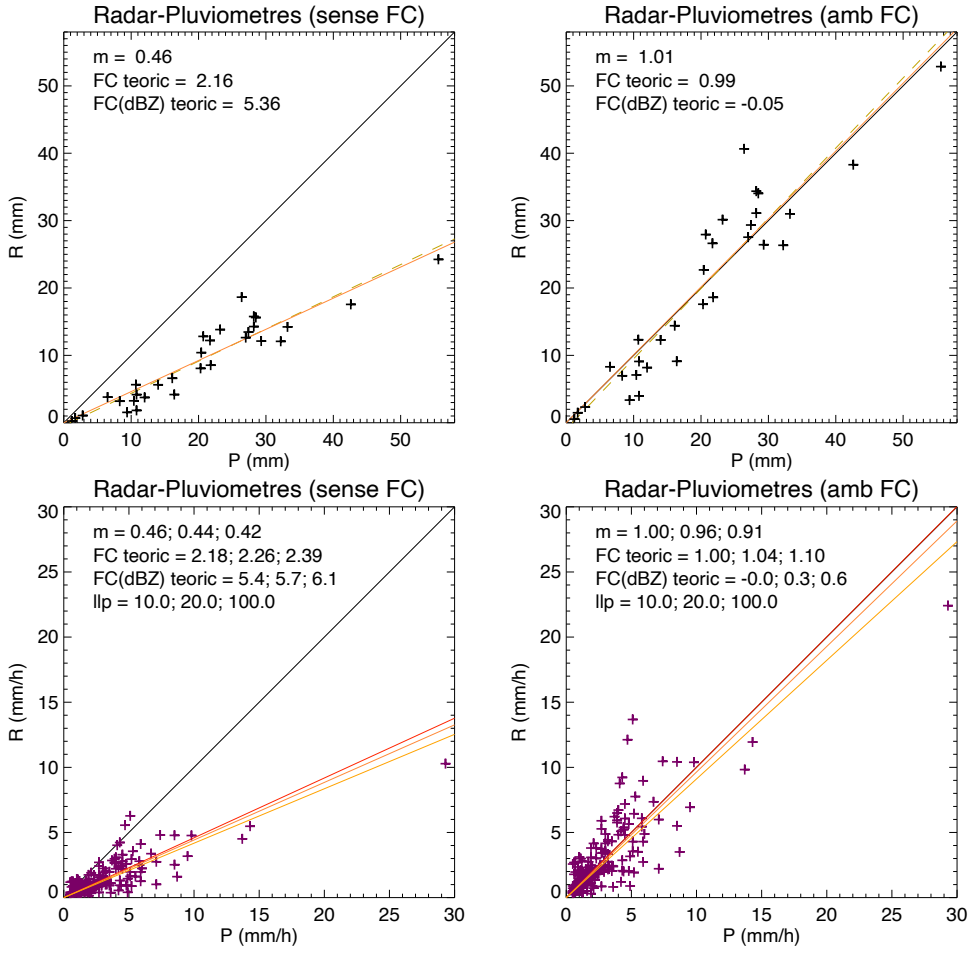


LMI: 20250412 – 20250416

lim= 200. fc aplicat= 2.18

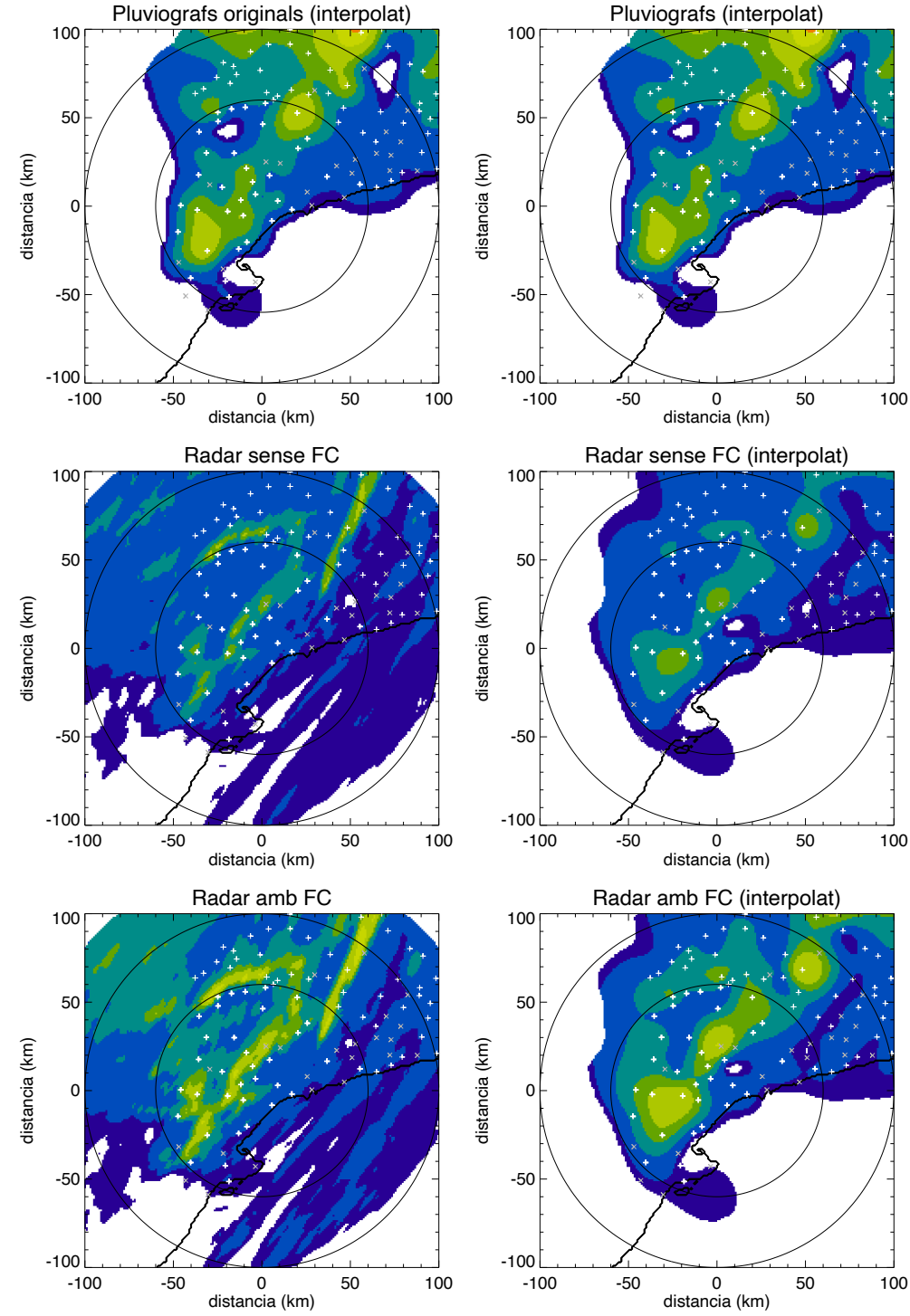


LMI: 20250412 – 20250416

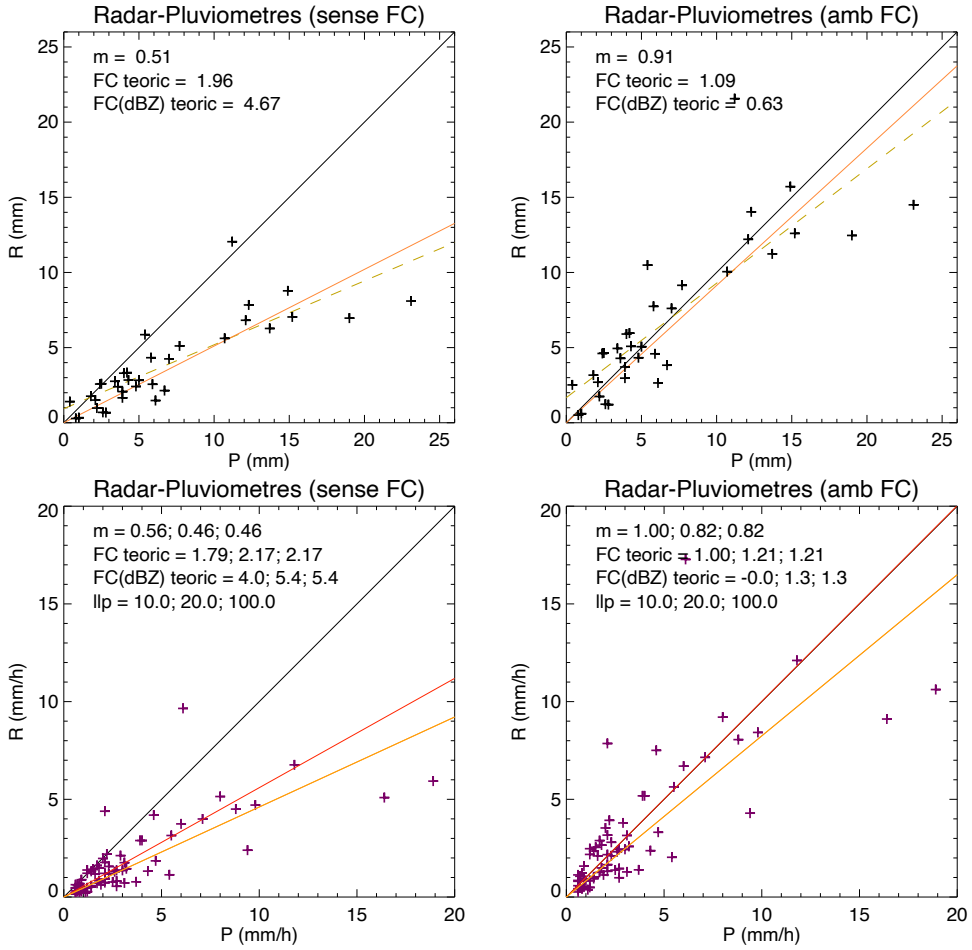


LMI: 20250419 – 20250419

lim= 150. fc aplicat= 1.79

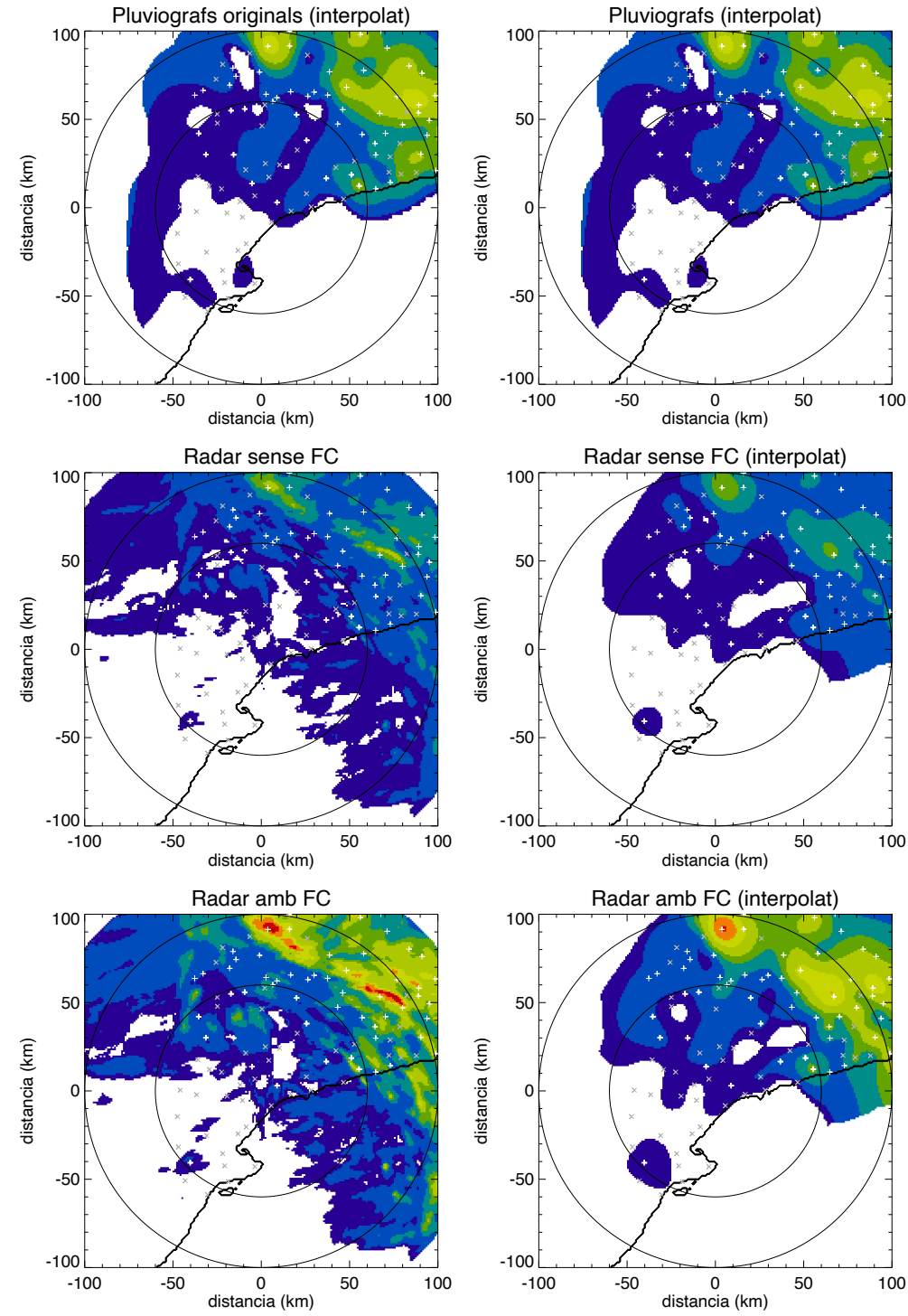


LMI: 20250419 – 20250419

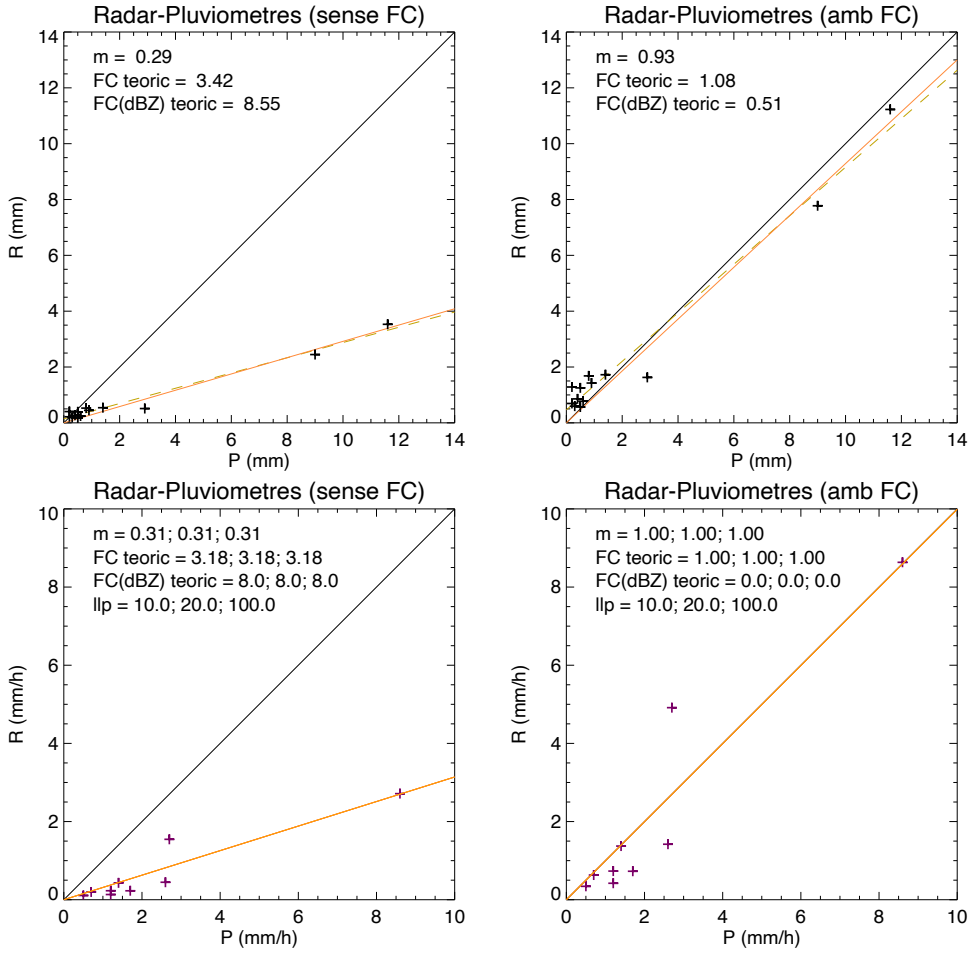


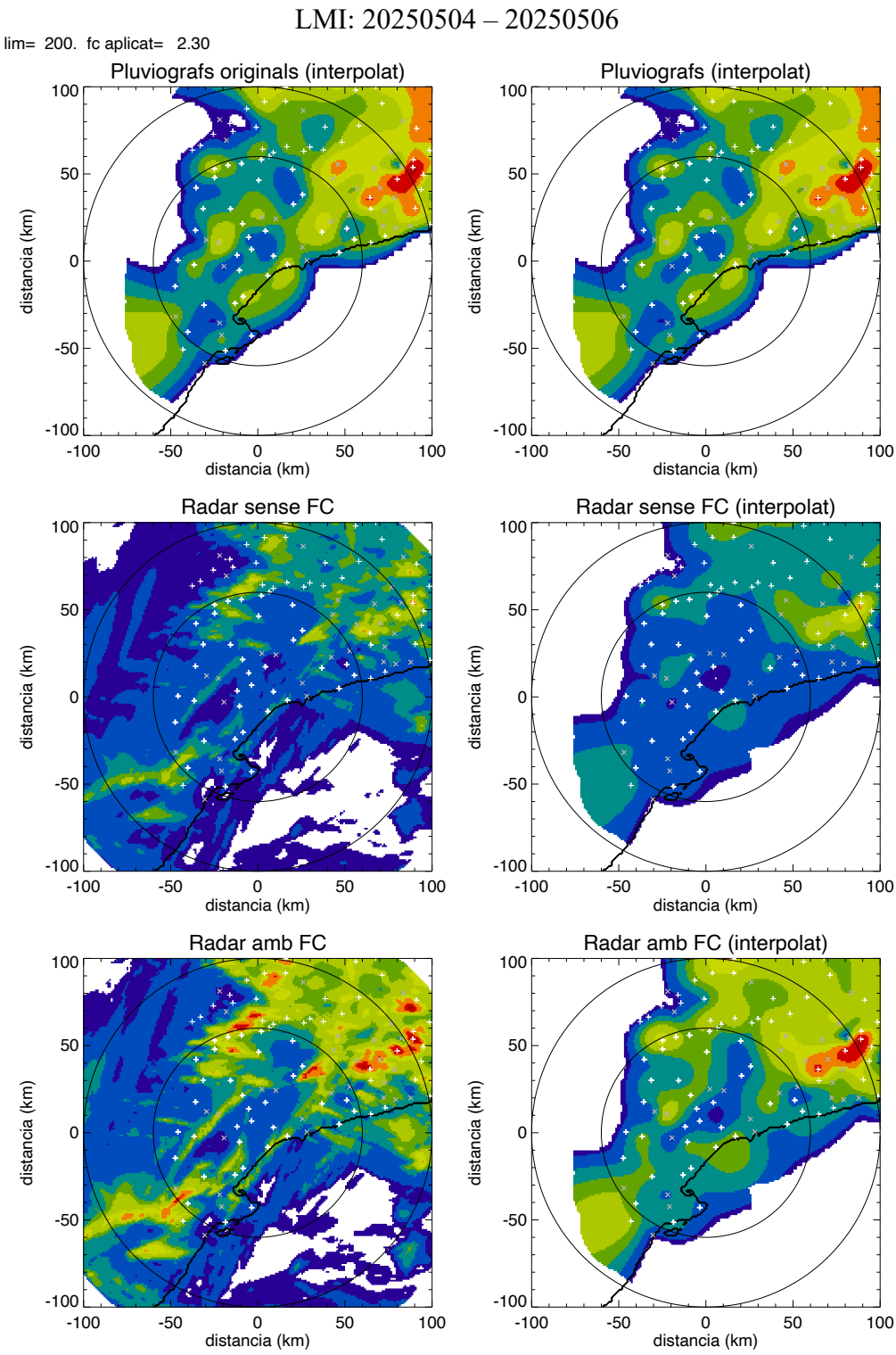
LMI: 20250426 – 20250427

lim= 150. fc aplicat= 3.18

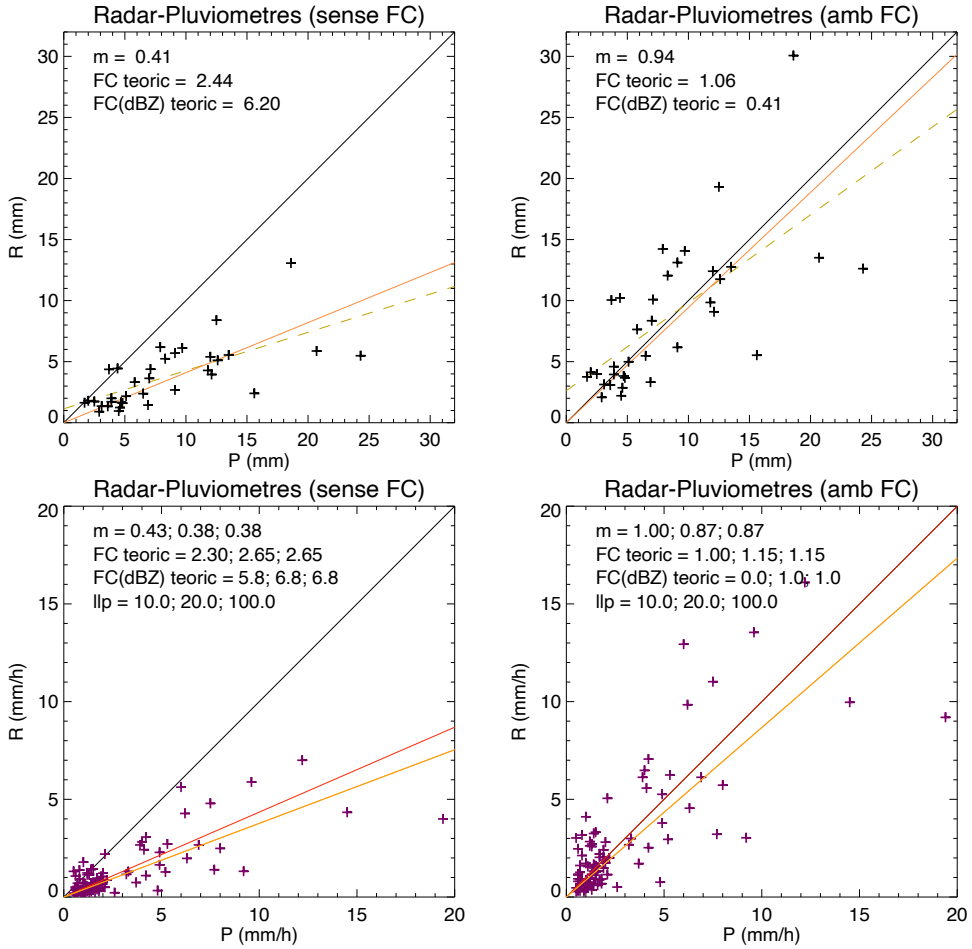


LMI: 20250426 – 20250427



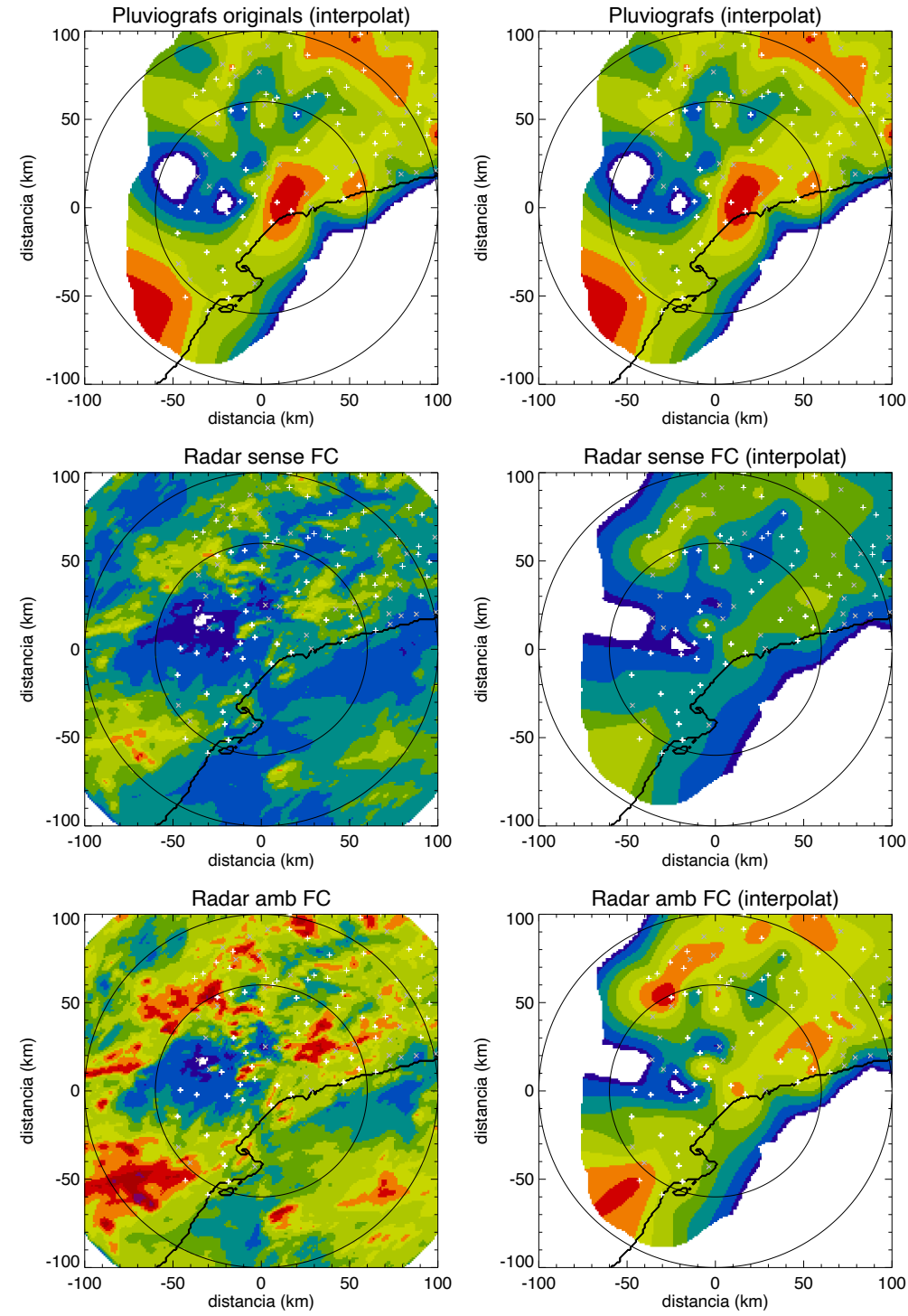

LMI: 20250504 – 20250506
lim= 200. fc aplicat= 2.30
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
100
50
0
-50
-100

LMI: 20250504 – 20250506

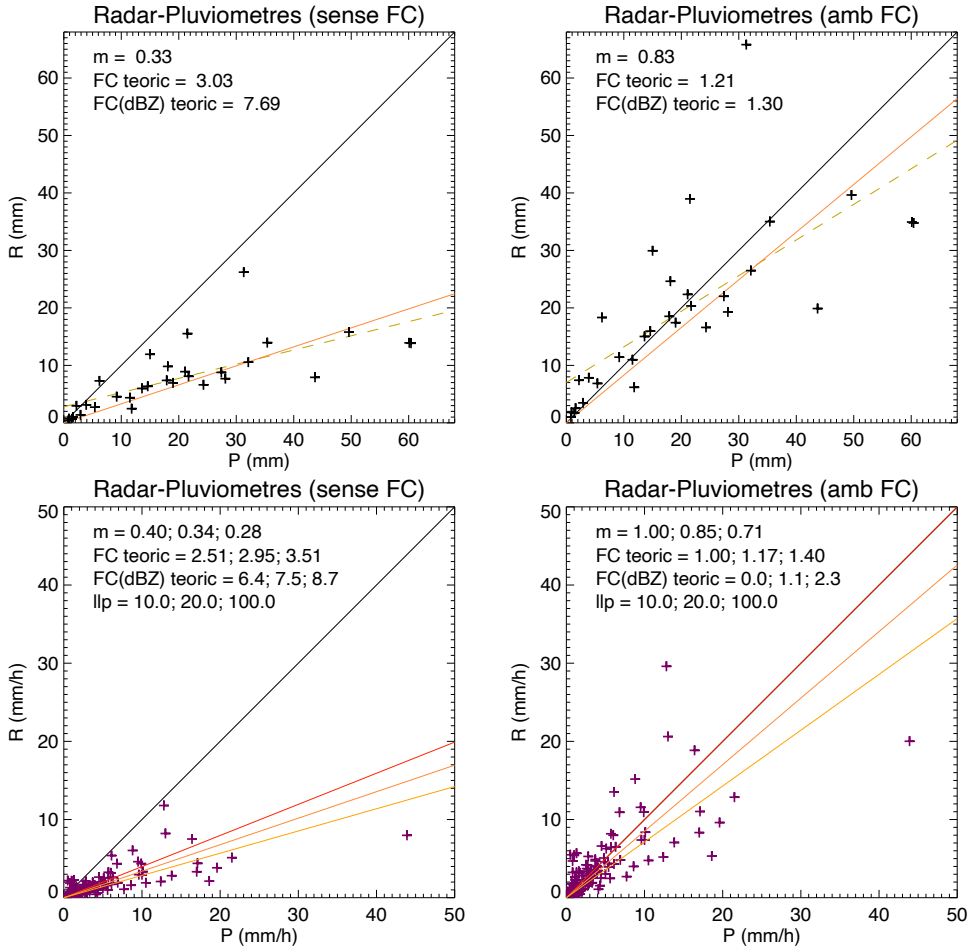


LMI: 20250508 – 20250514

lim= 200. fc aplicat= 2.51

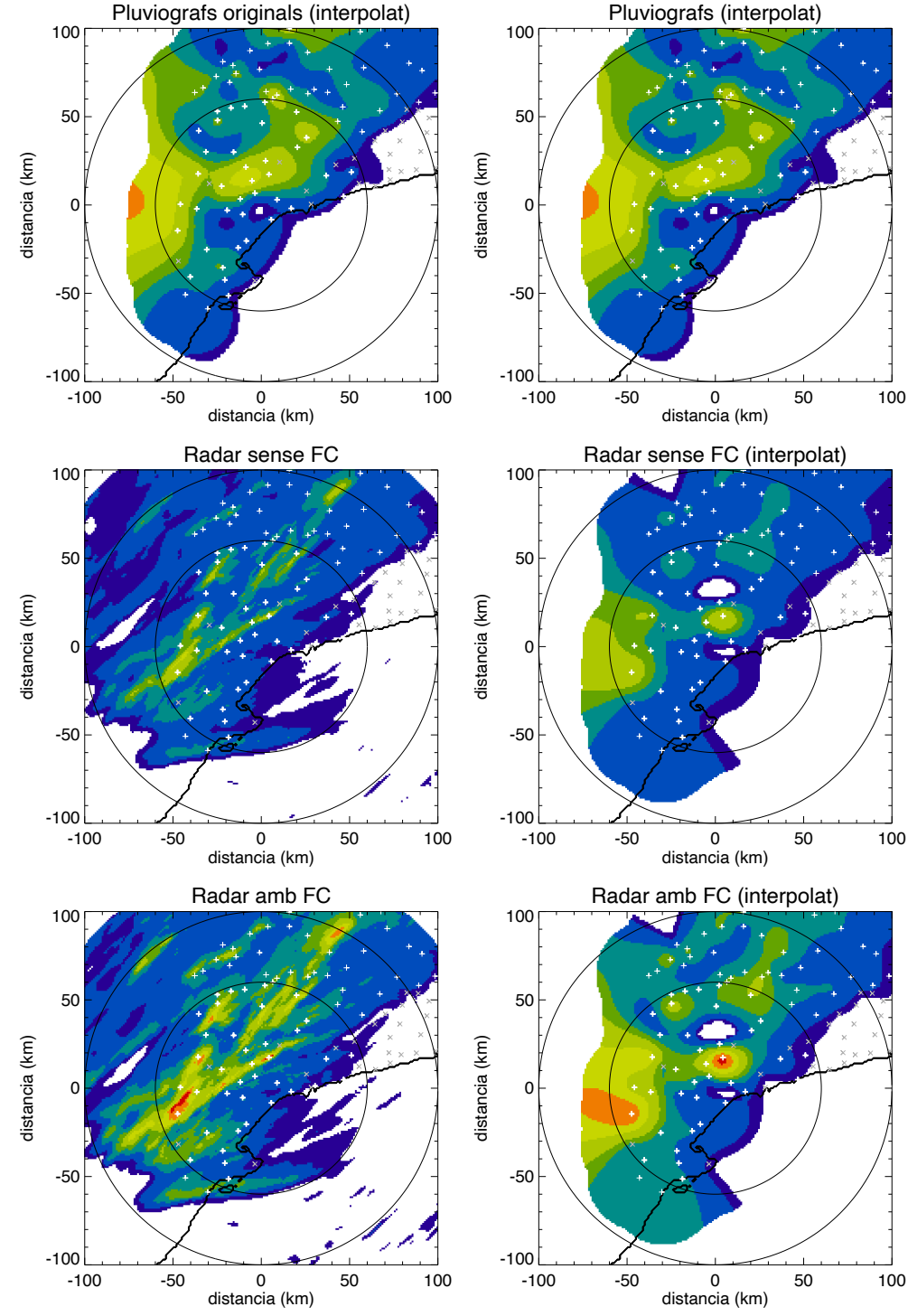


LMI: 20250508 – 20250514

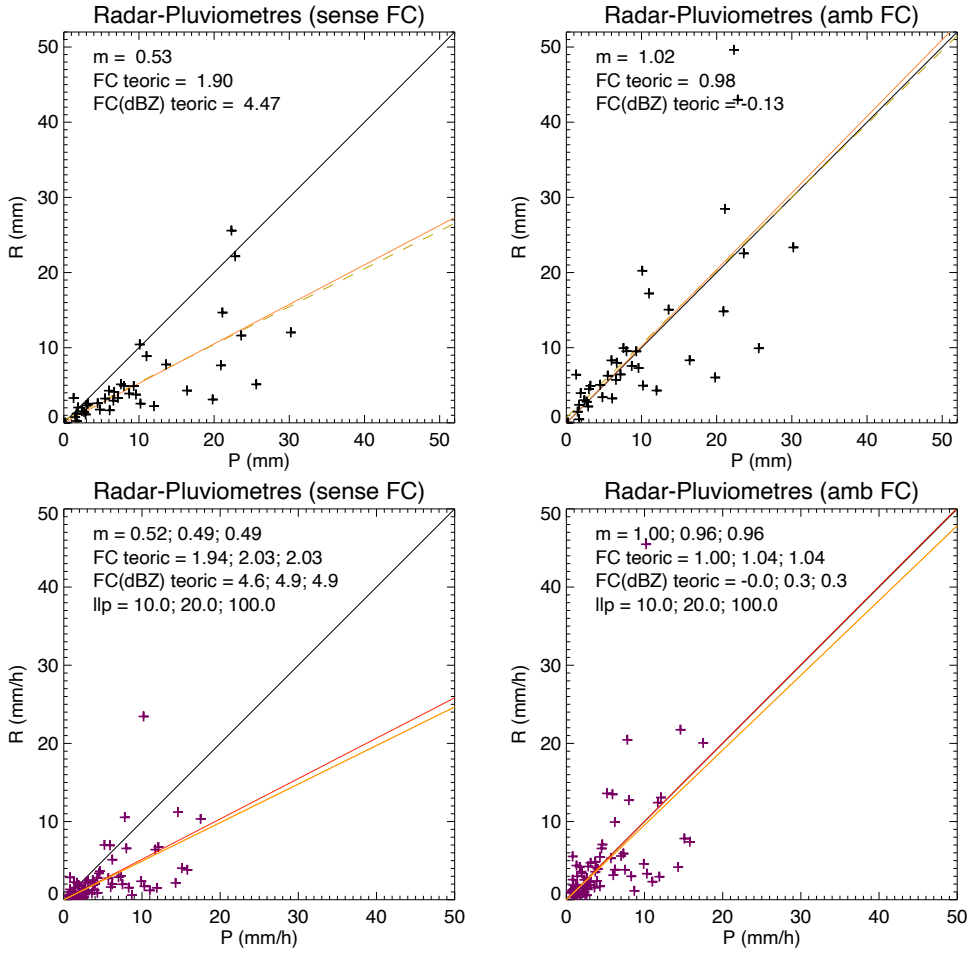


LMI: 20250519 – 20250519

lim= 150. fc aplicat= 1.94

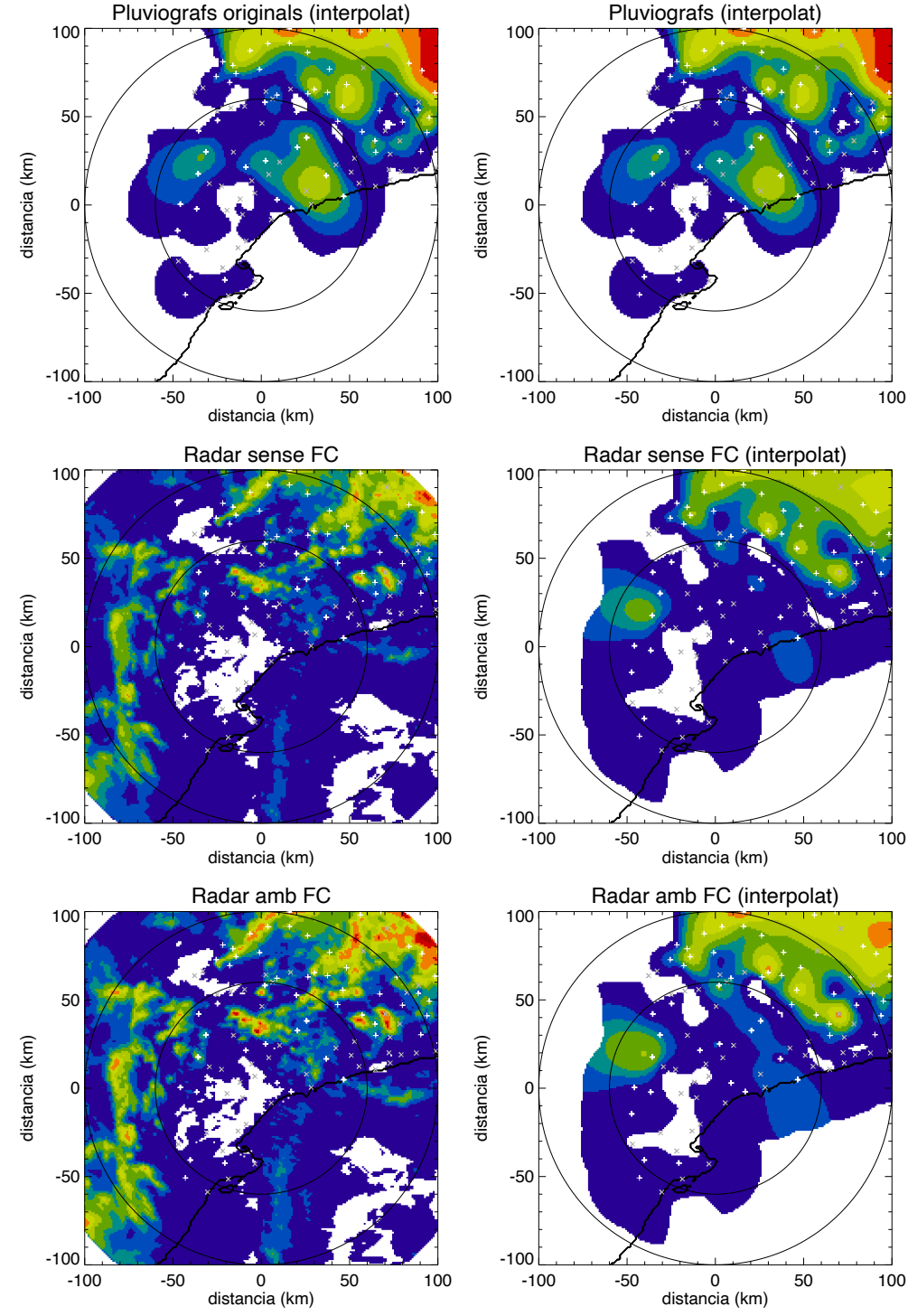


LMI: 20250519 – 20250519

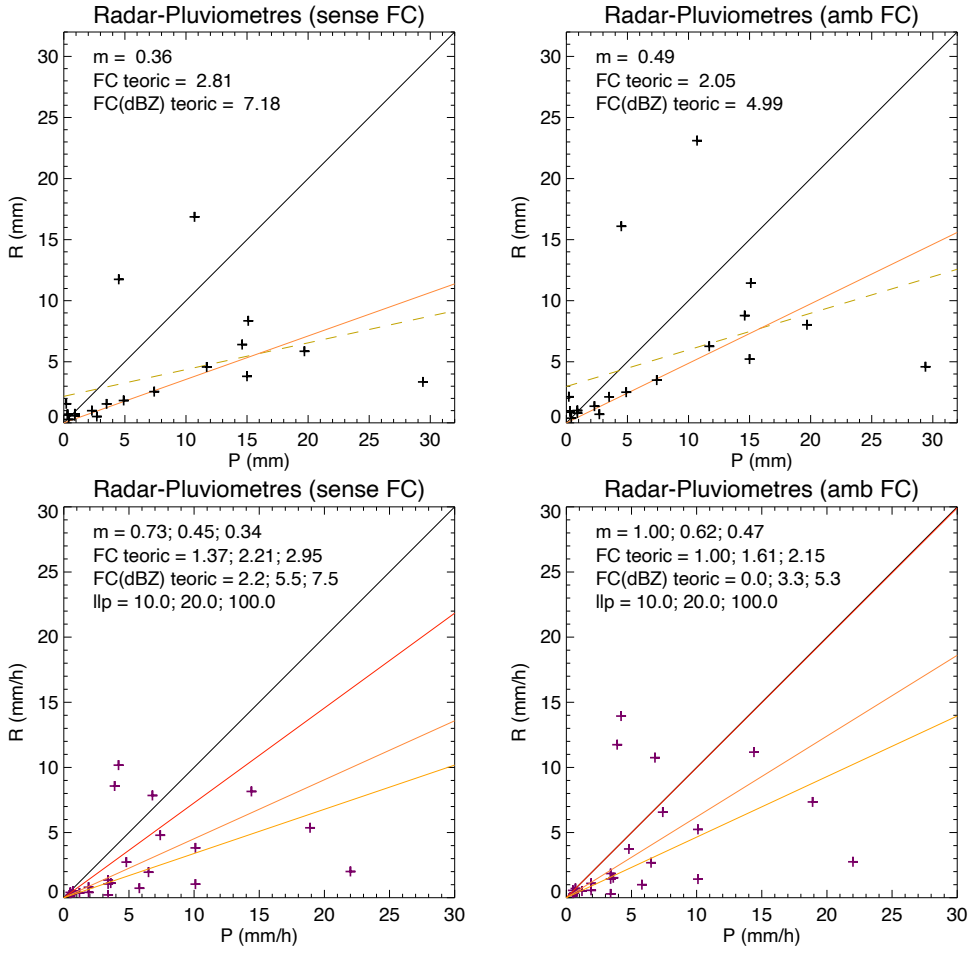


LMI: 20250630 – 20250707

lim= 250. fc aplicat= 1.37

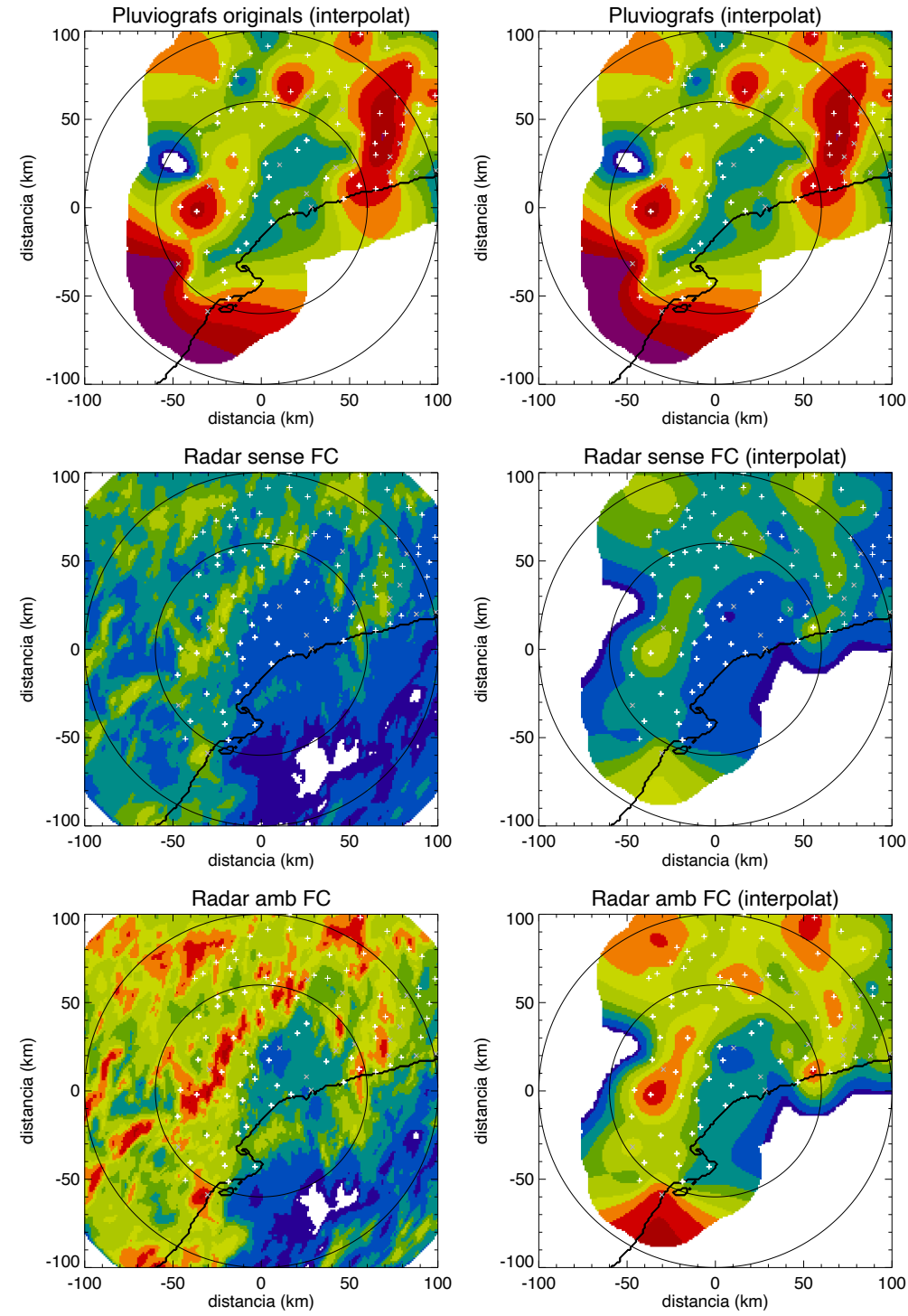


LMI: 20250630 – 20250707

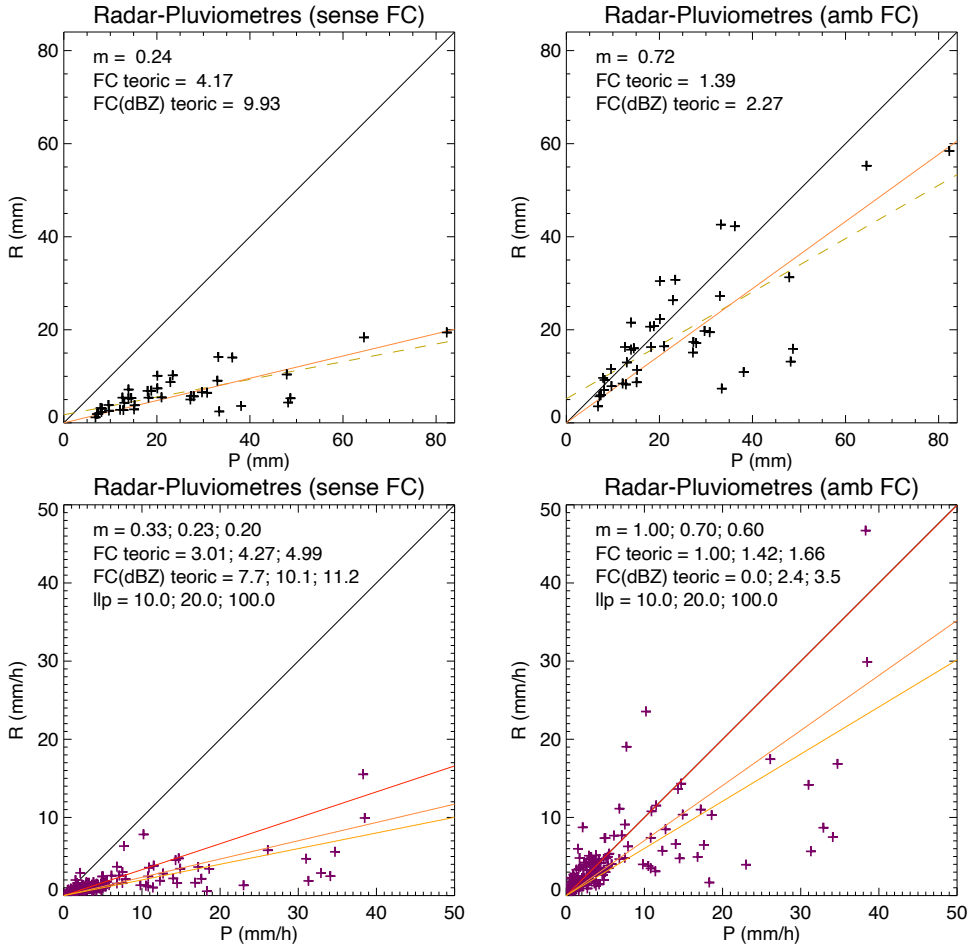


LMI: 20250712 – 20250712

lim= 200. fc aplicat= 3.01

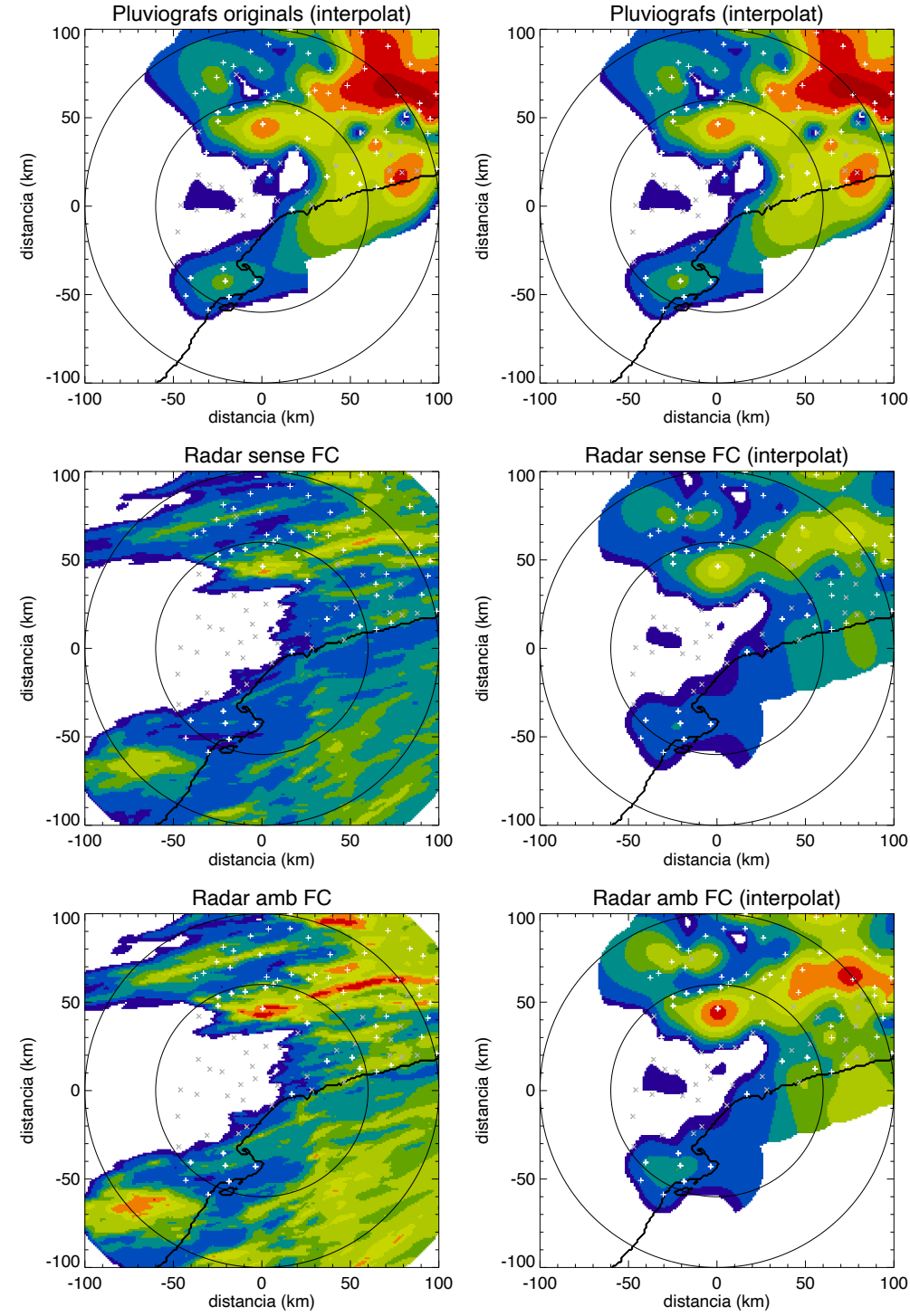


LMI: 20250712 – 20250712

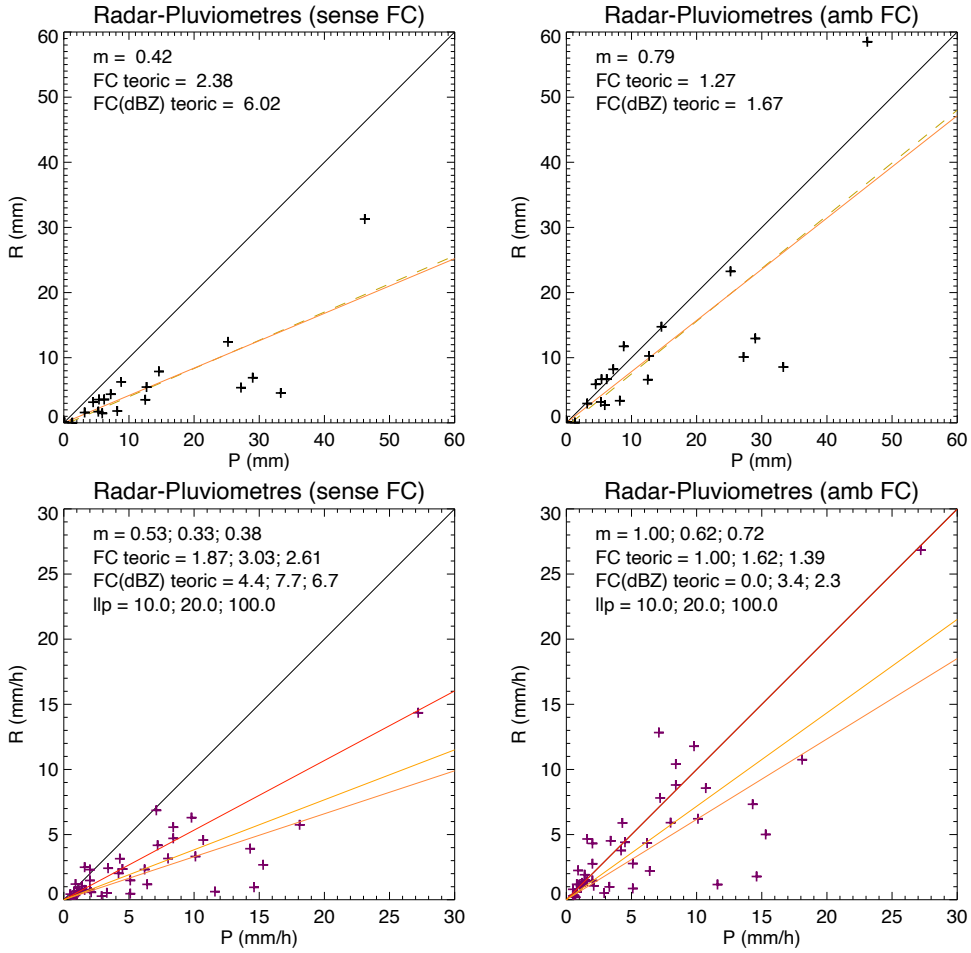


LMI: 20250723 – 20250724

lim= 200. fc aplicat= 1.87

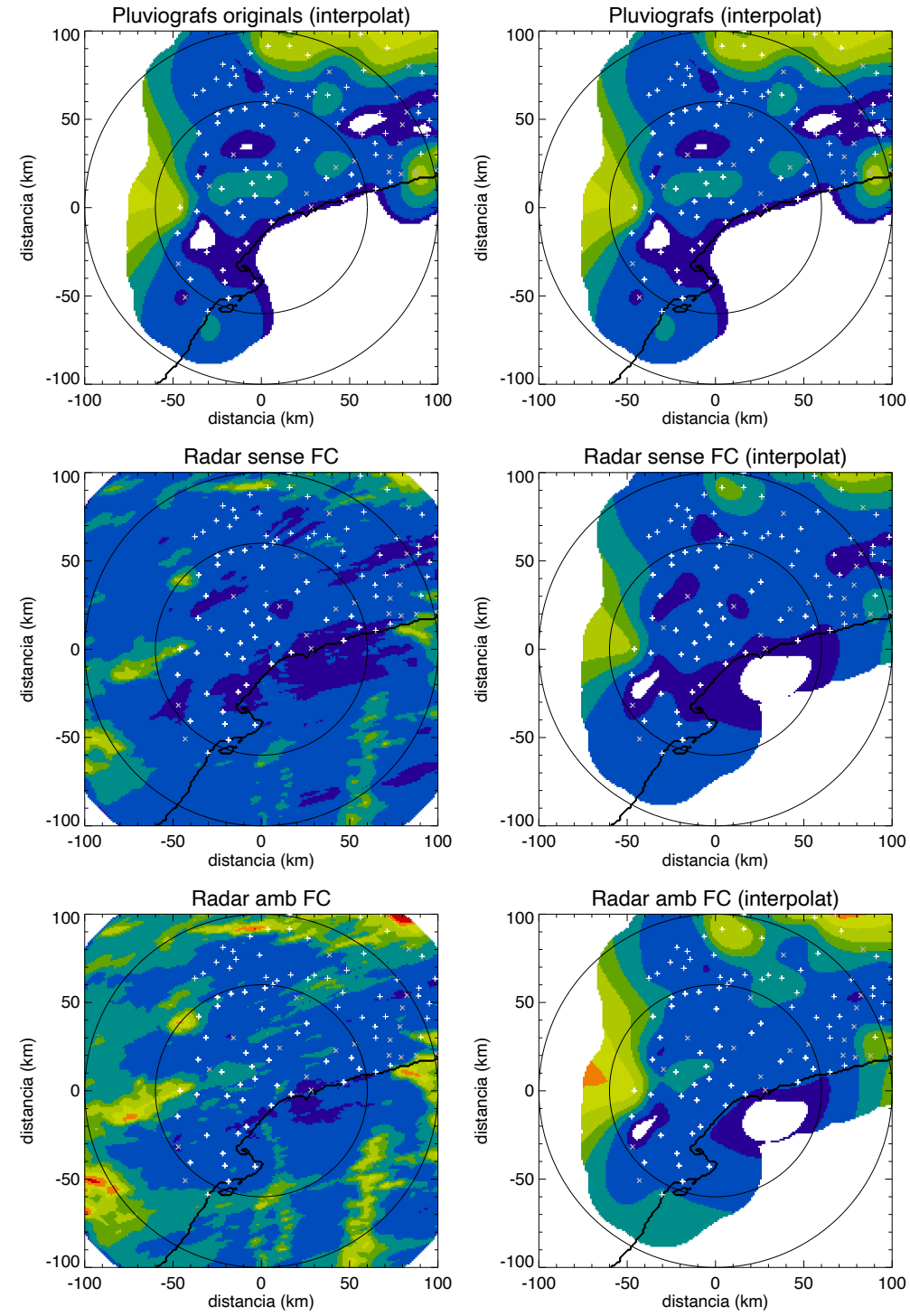


LMI: 20250723 – 20250724

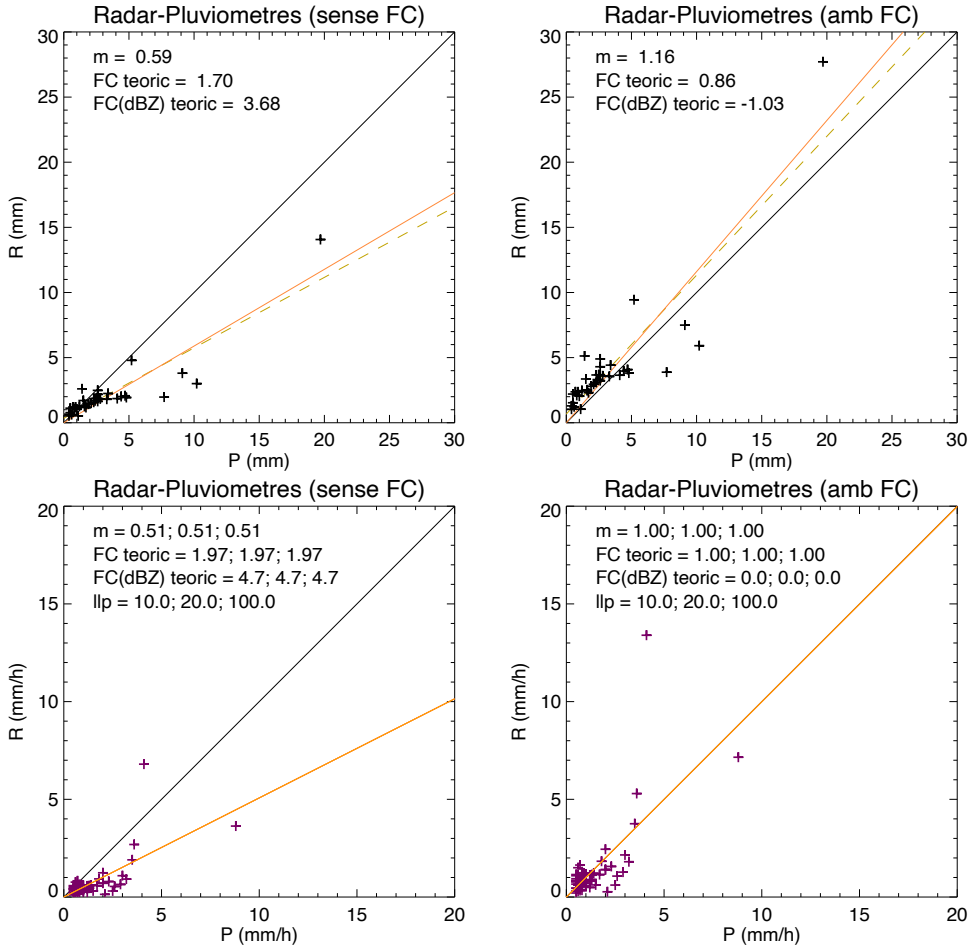


LMI: 20250818 – 20250820

lim= 200. fc aplicat= 1.97

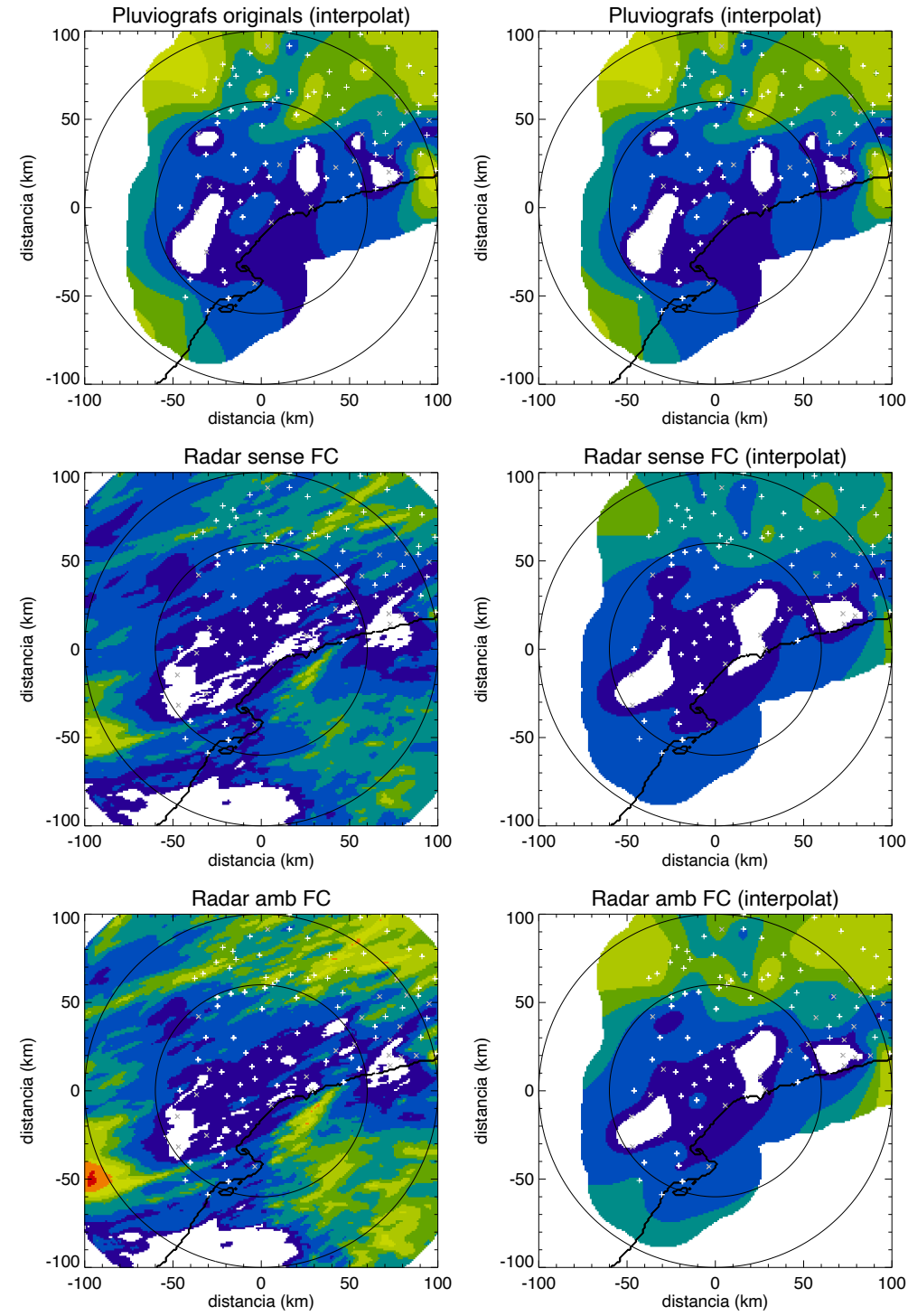


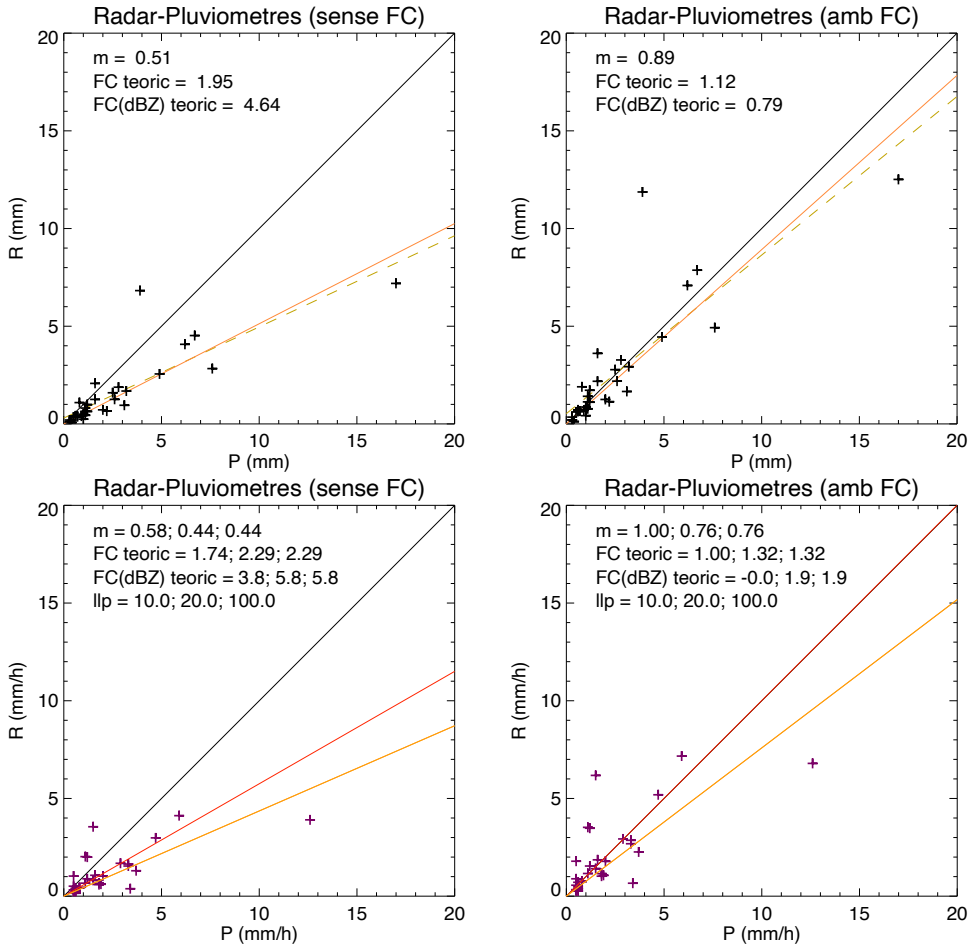
LMI: 20250818 – 20250820



LMI: 20250827 – 20250829

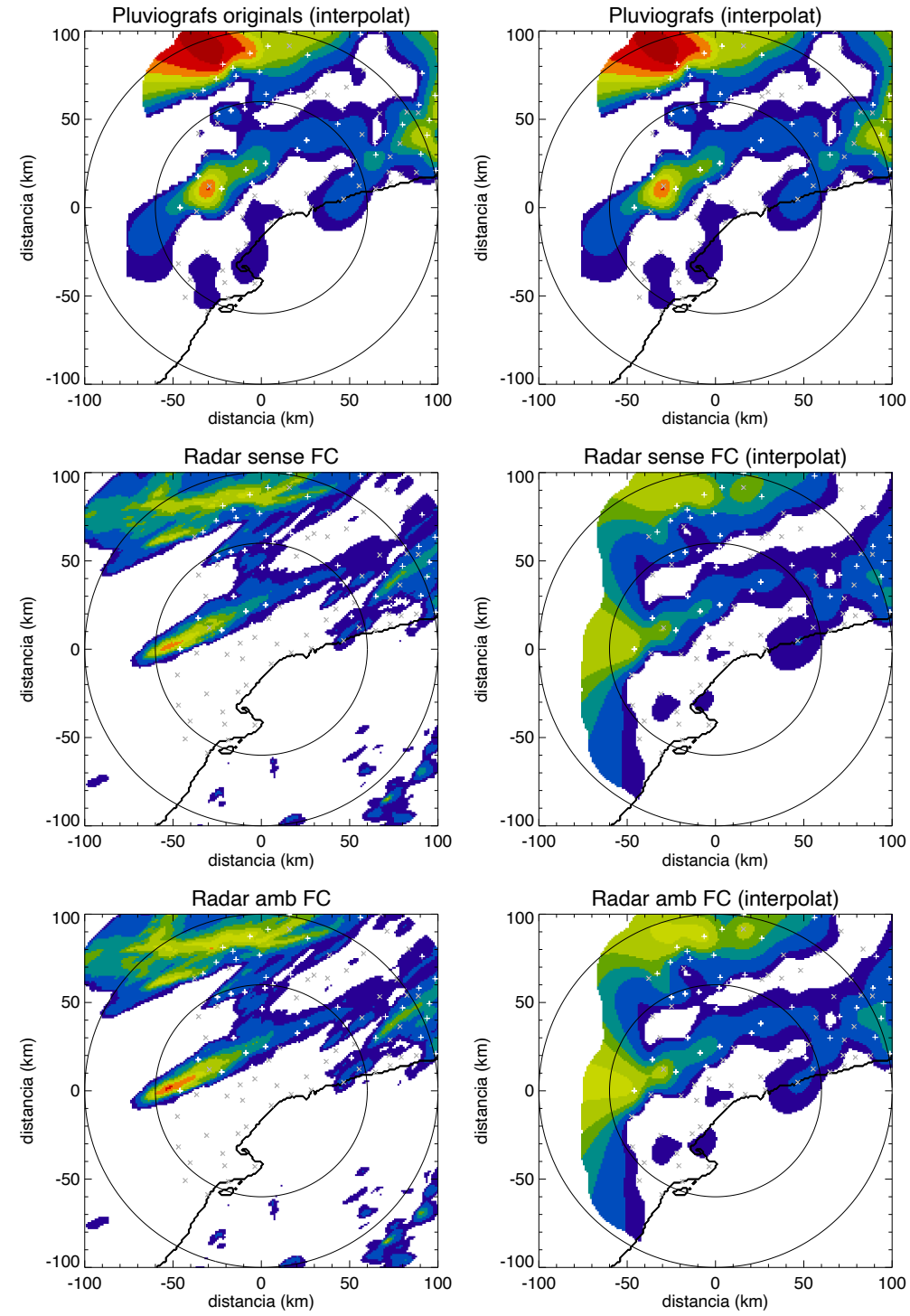
lim= 200. fc aplicat= 1.74



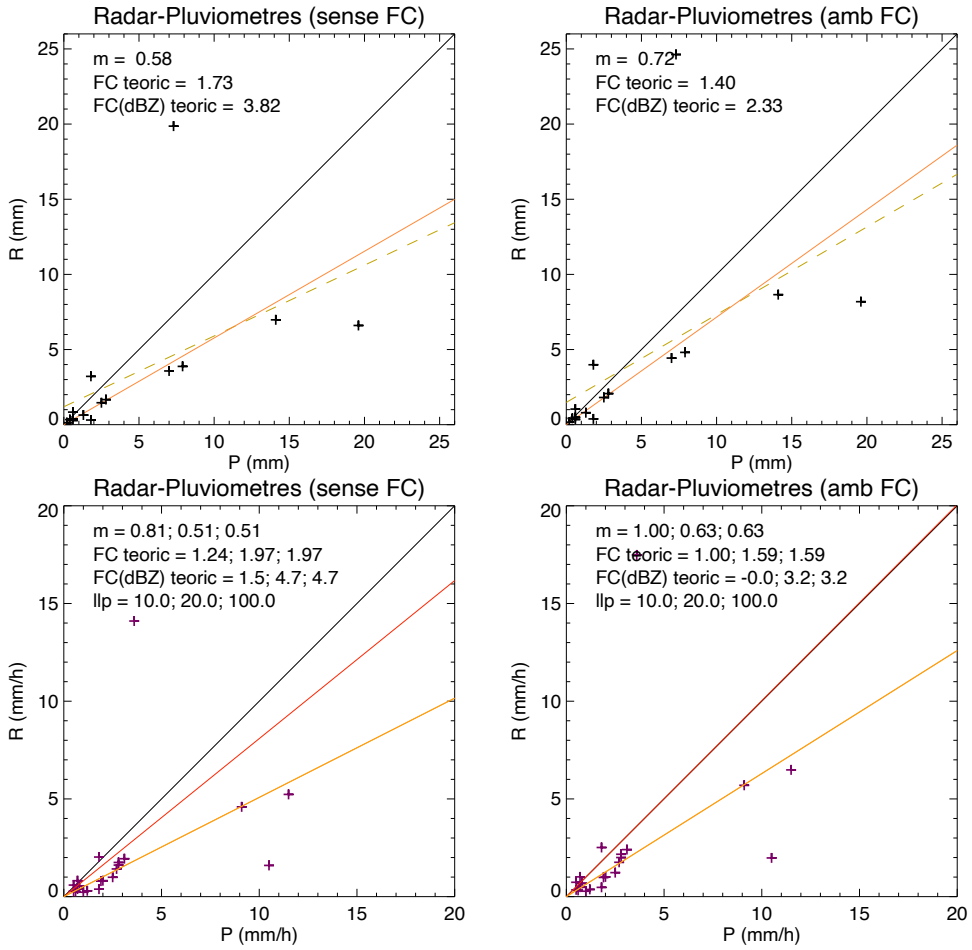

Radar-Pluviometres (sense FC)
m = 0.51
FC teoric = 1.95
FC(dBZ) teoric = 4.64
R (mm)
P (mm)
Radar-Pluviometres (amb FC)
m = 0.89
FC teoric = 1.12
FC(dBZ) teoric = 0.79
R (mm)
P (mm)
Radar-Pluviometres (sense FC)
m = 0.58; 0.44; 0.44
FC teoric = 1.74; 2.29; 2.29
FC(dBZ) teoric = 3.8; 5.8; 5.8
llp = 10.0; 20.0; 100.0
R (mm/h)
P (mm/h)
Radar-Pluviometres (amb FC)
m = 1.00; 0.76; 0.76
FC teoric = 1.00; 1.32; 1.32
FC(dBZ) teoric = -0.0; 1.9; 1.9
llp = 10.0; 20.0; 100.0
R (mm/h)
P (mm/h)

LMI: 20250831 – 20250901

lim= 200. fc aplicat= 1.24

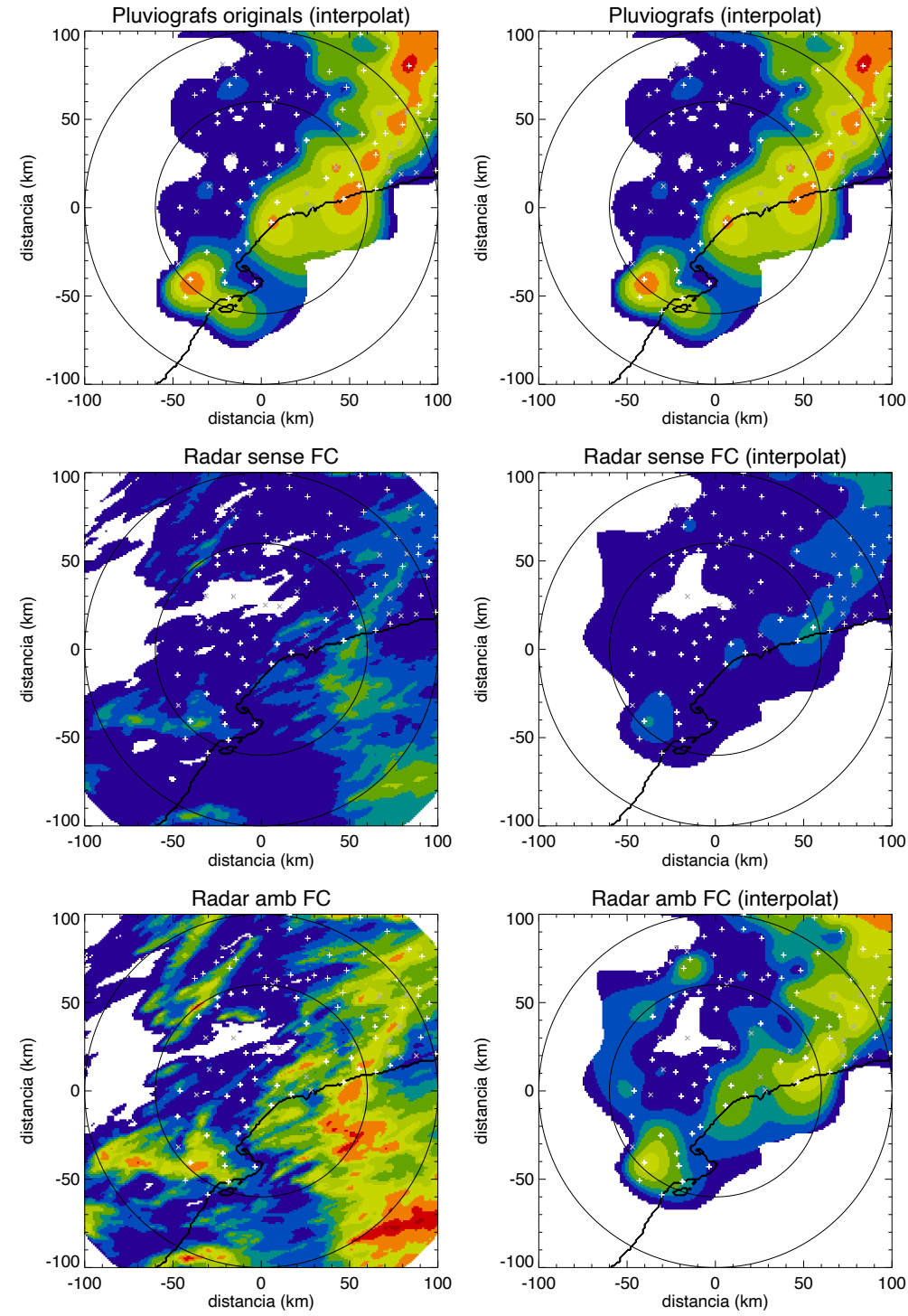


LMI: 20250831 – 20250901

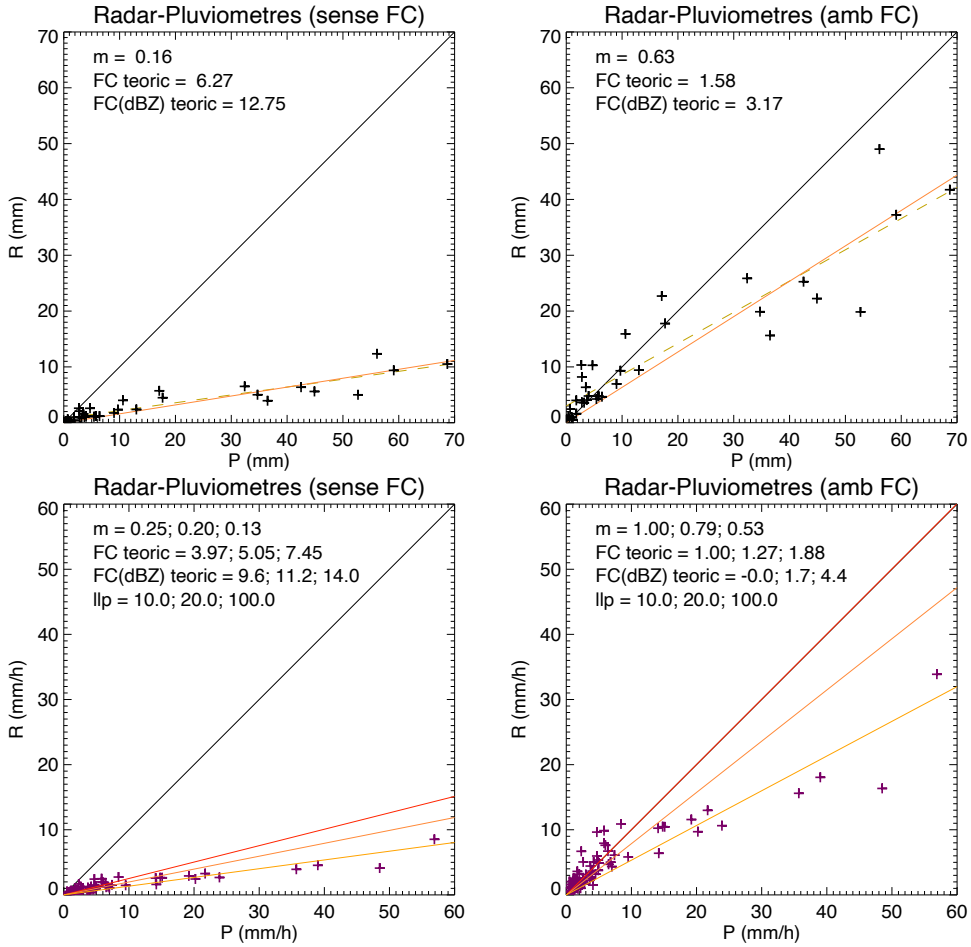


LMI: 20250908 – 20250909

lim= 250. fc aplicat= 3.97

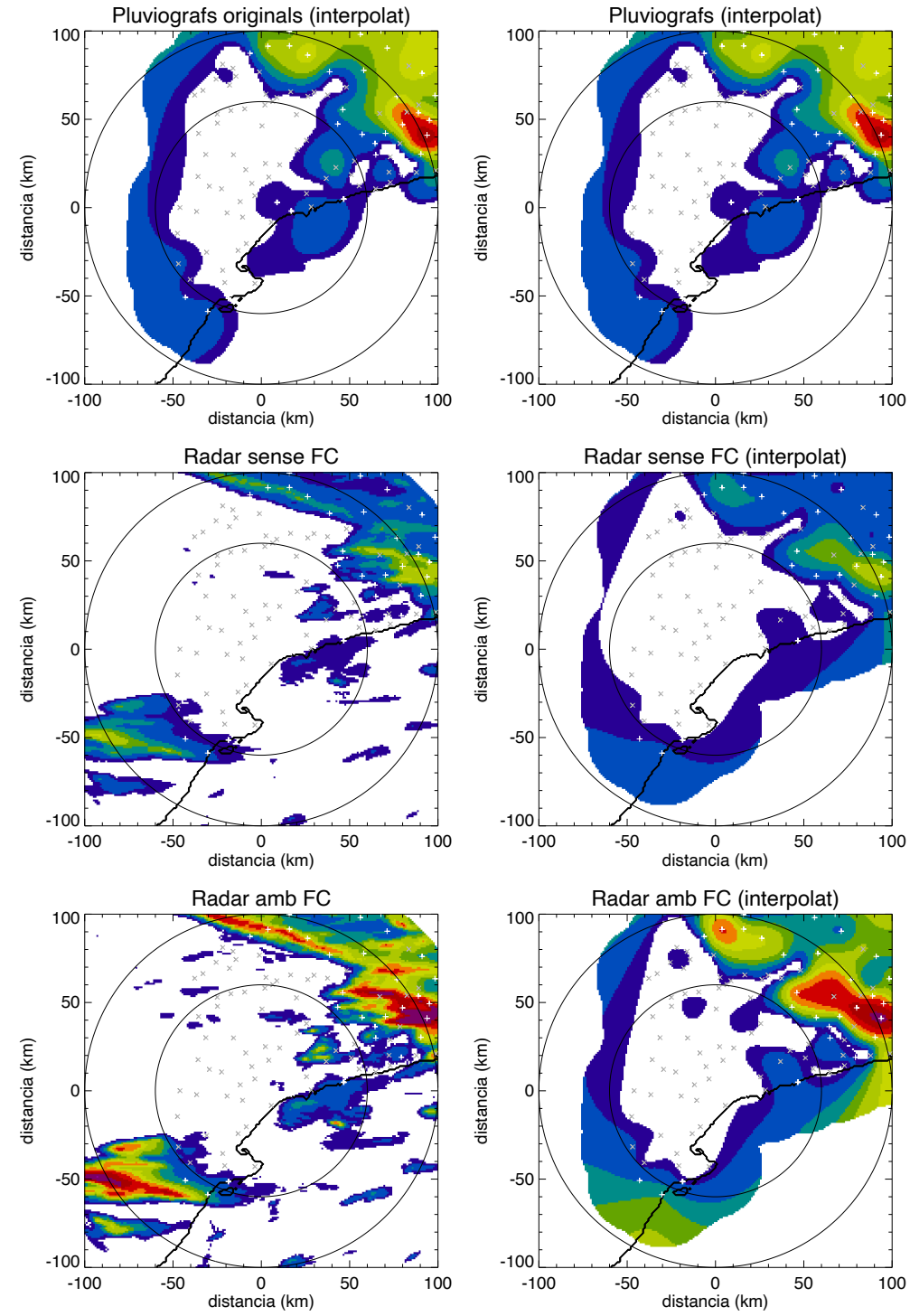


LMI: 20250908 – 20250909

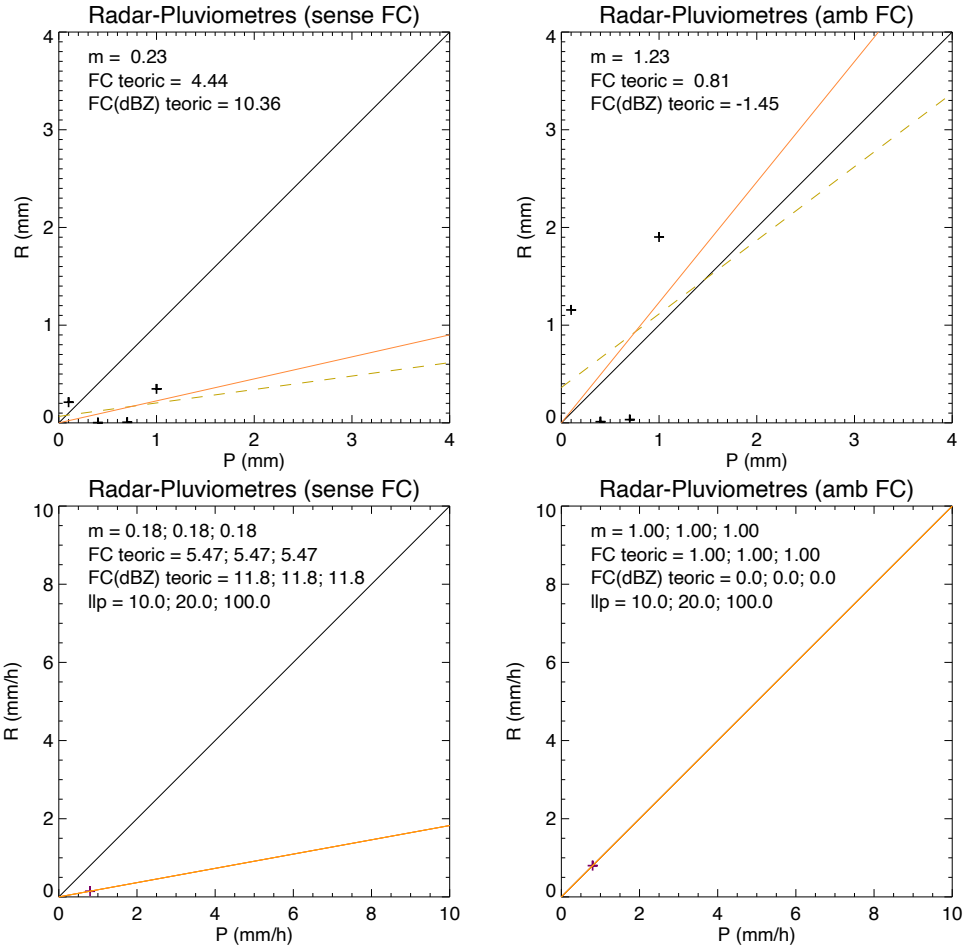


LMI: 20250912 – 20250913

lim= 200. fc aplicat= 5.47

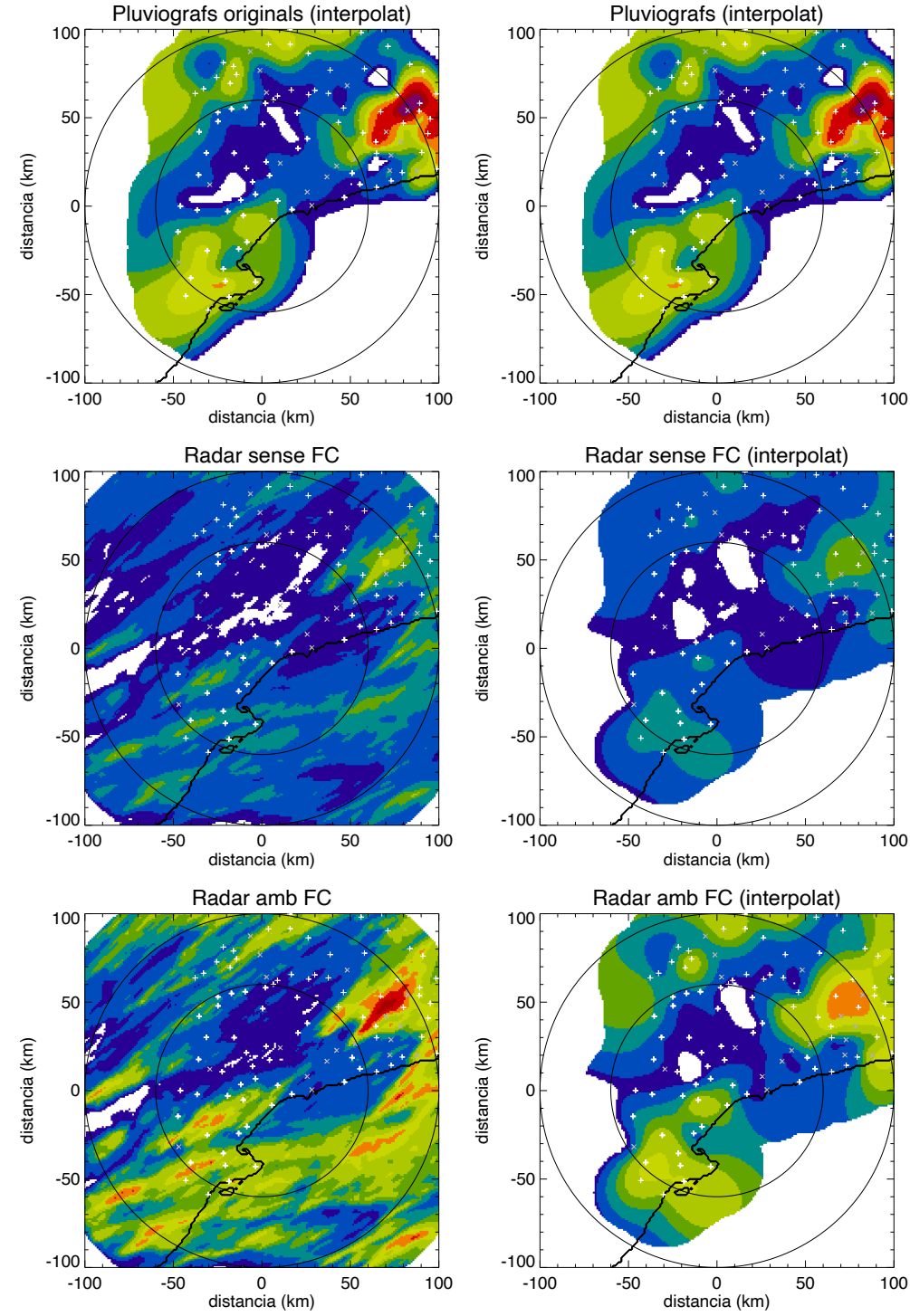


LMI: 20250912 – 20250913

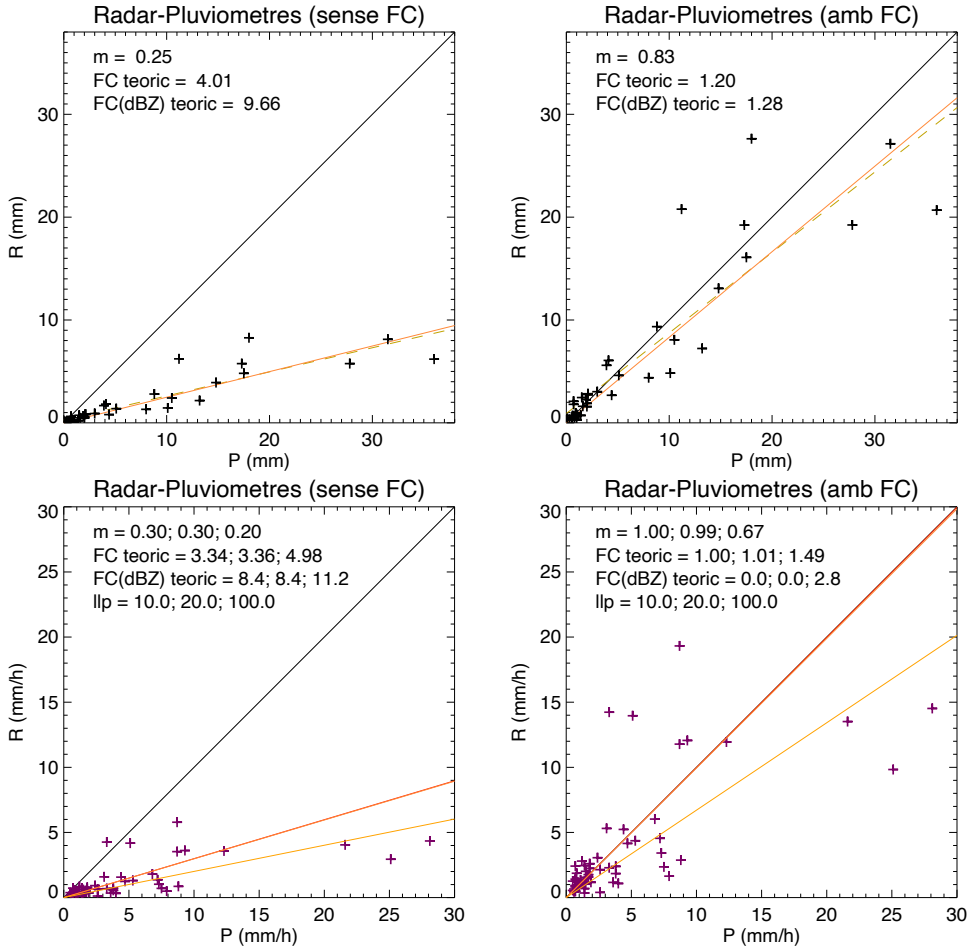


LMI: 20250921 – 20250921

lim= 200. fc aplicat= 3.34

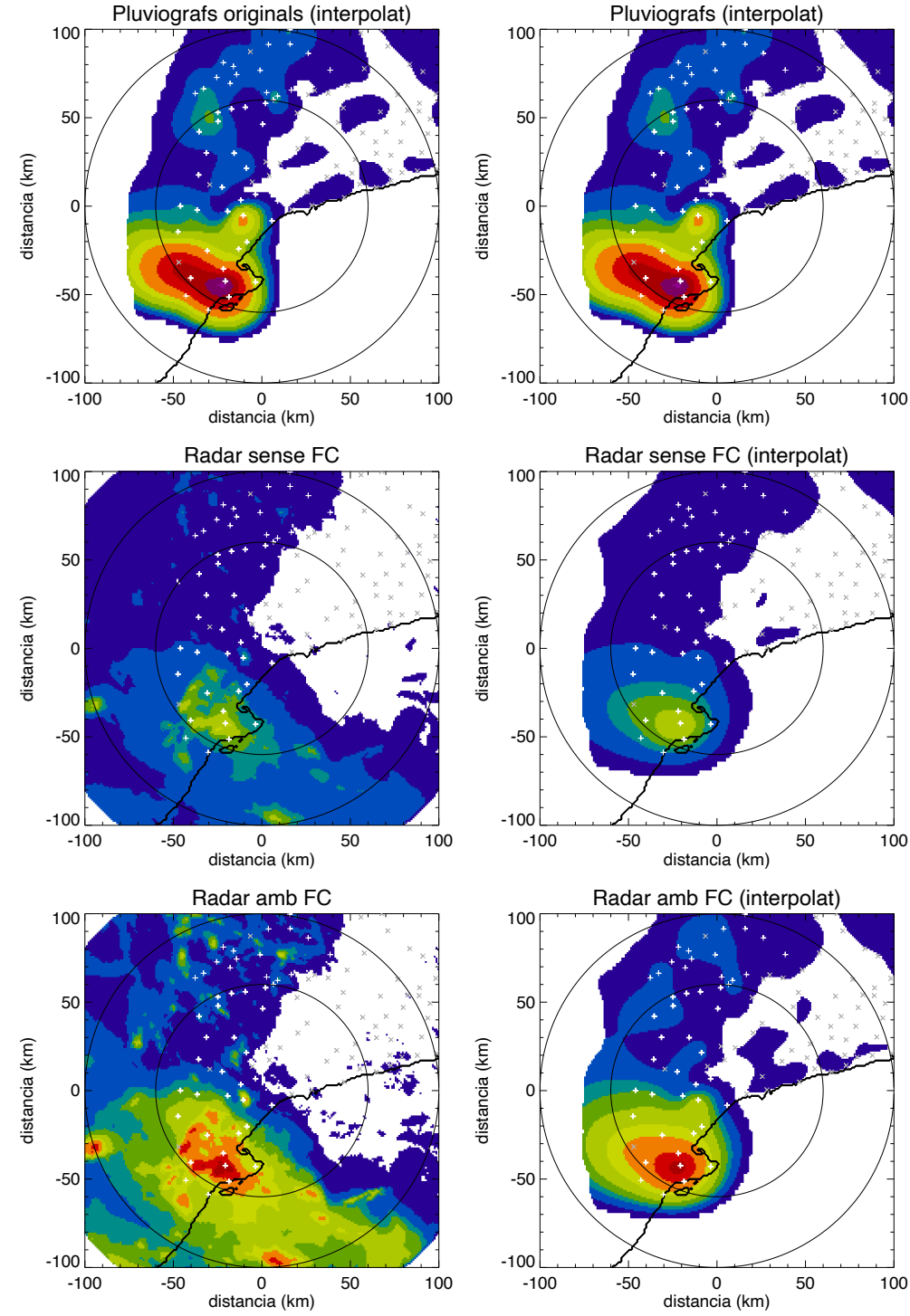


LMI: 20250921 – 20250921

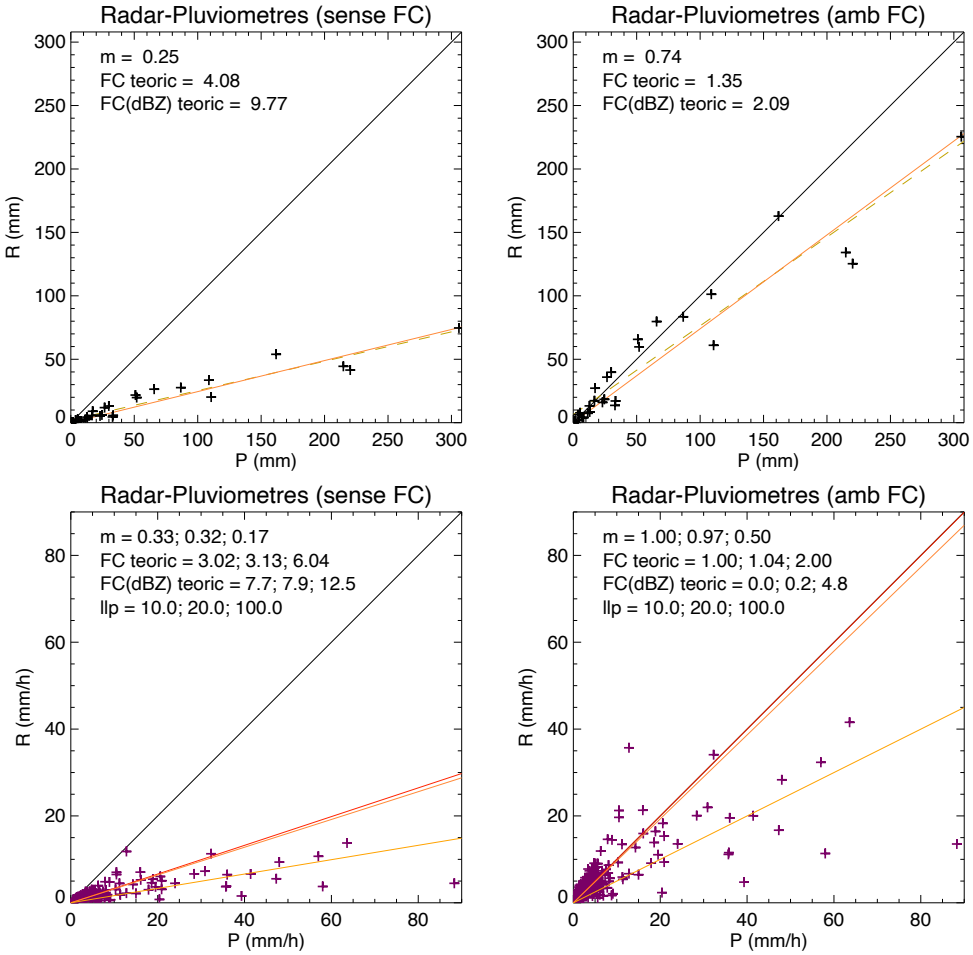


LMI: 20250928 – 20250929

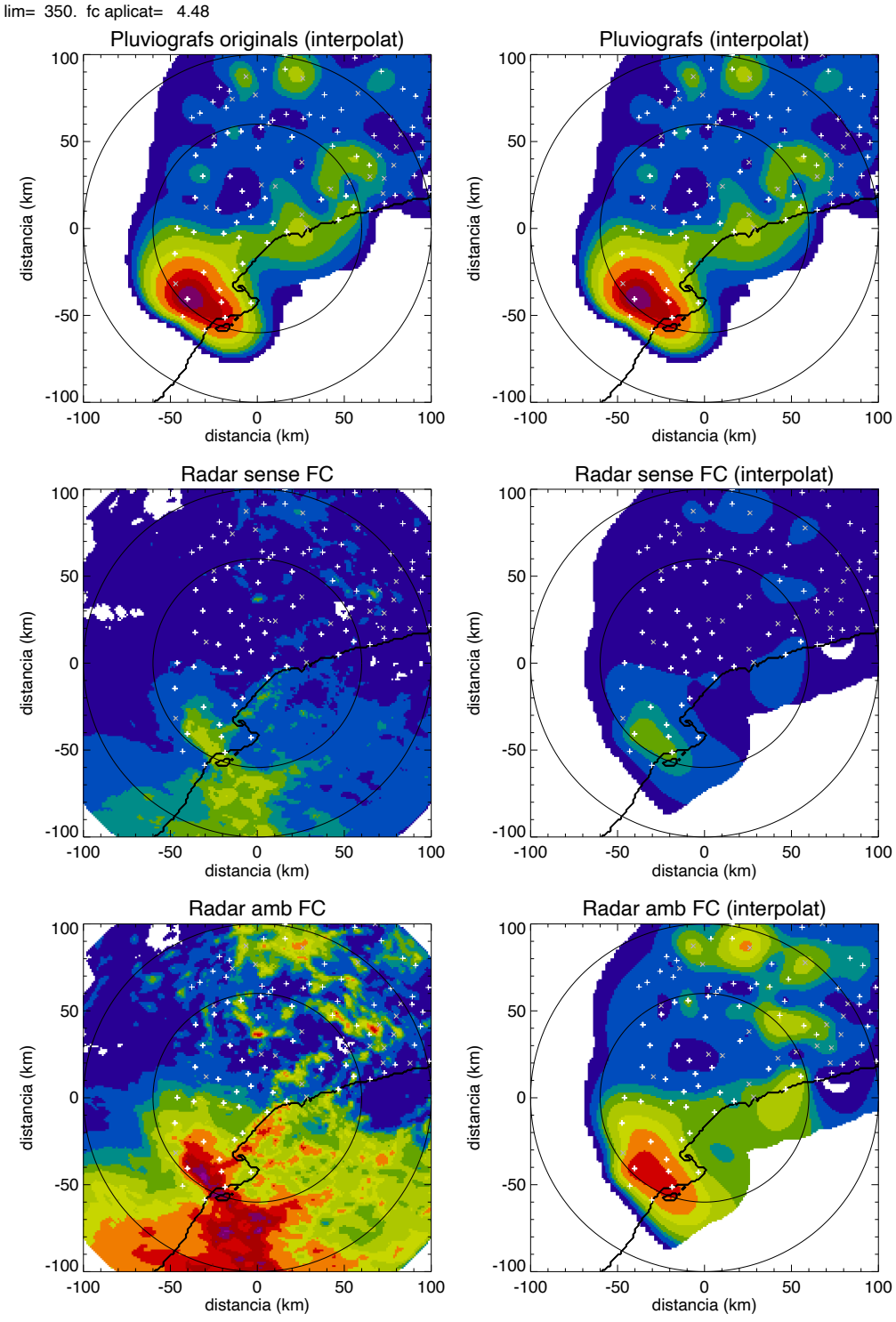
lim= 350. fc aplicat= 3.02



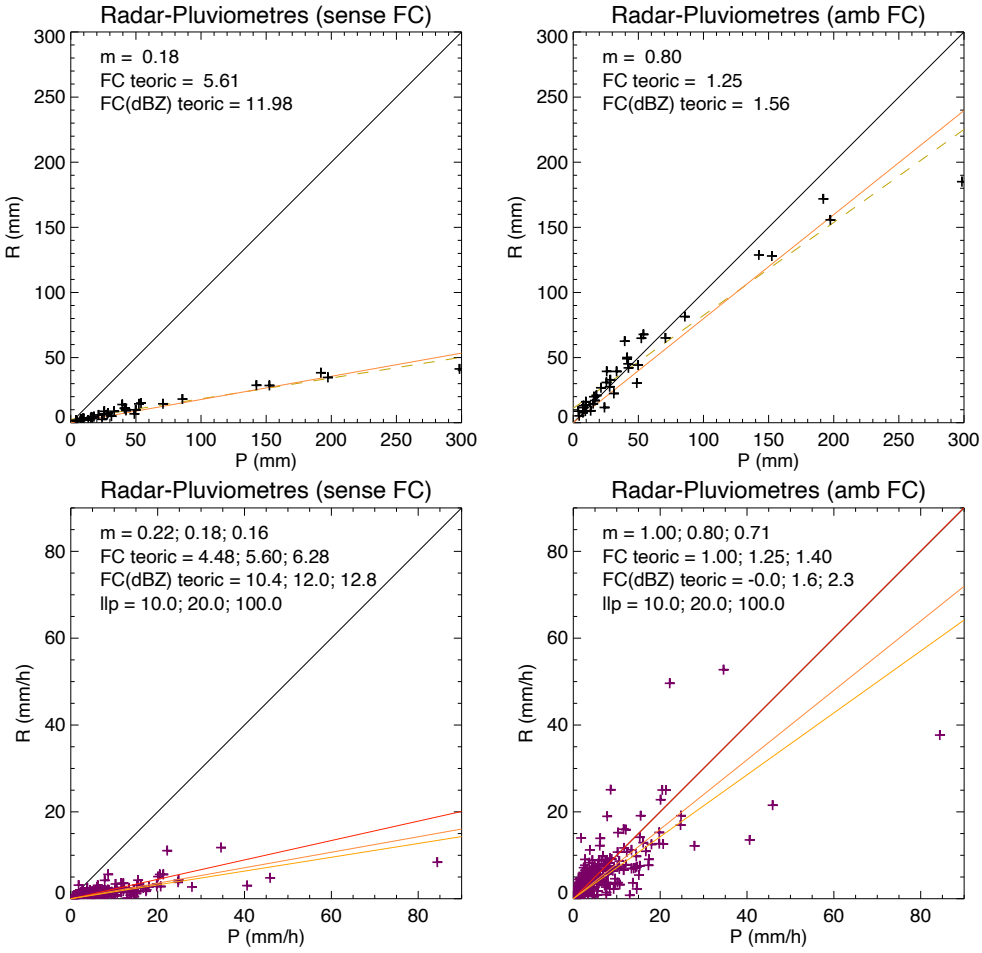
LMI: 20250928 – 20250929



LMI: 20251011 – 20251016

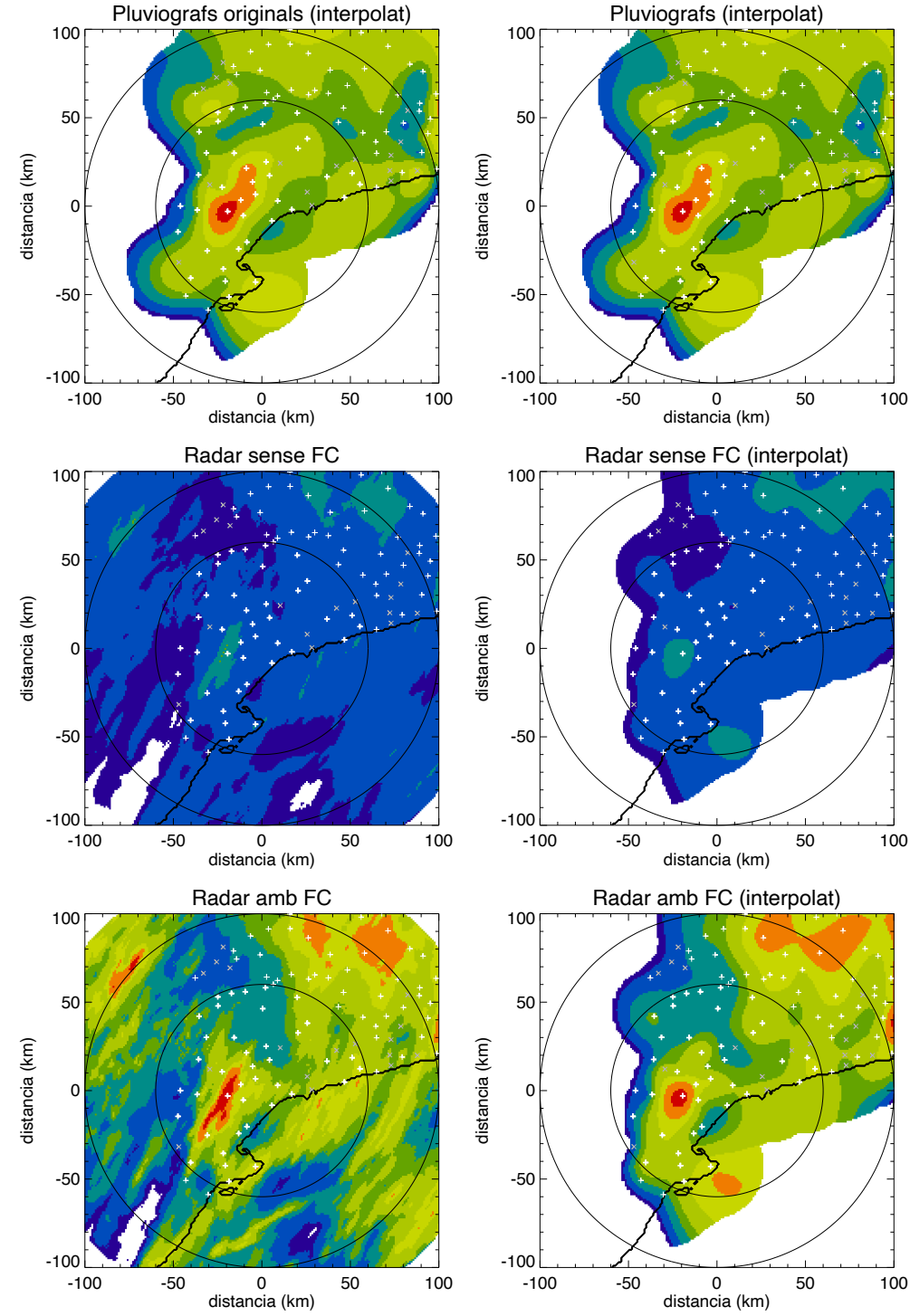


LMI: 20251011 – 20251016

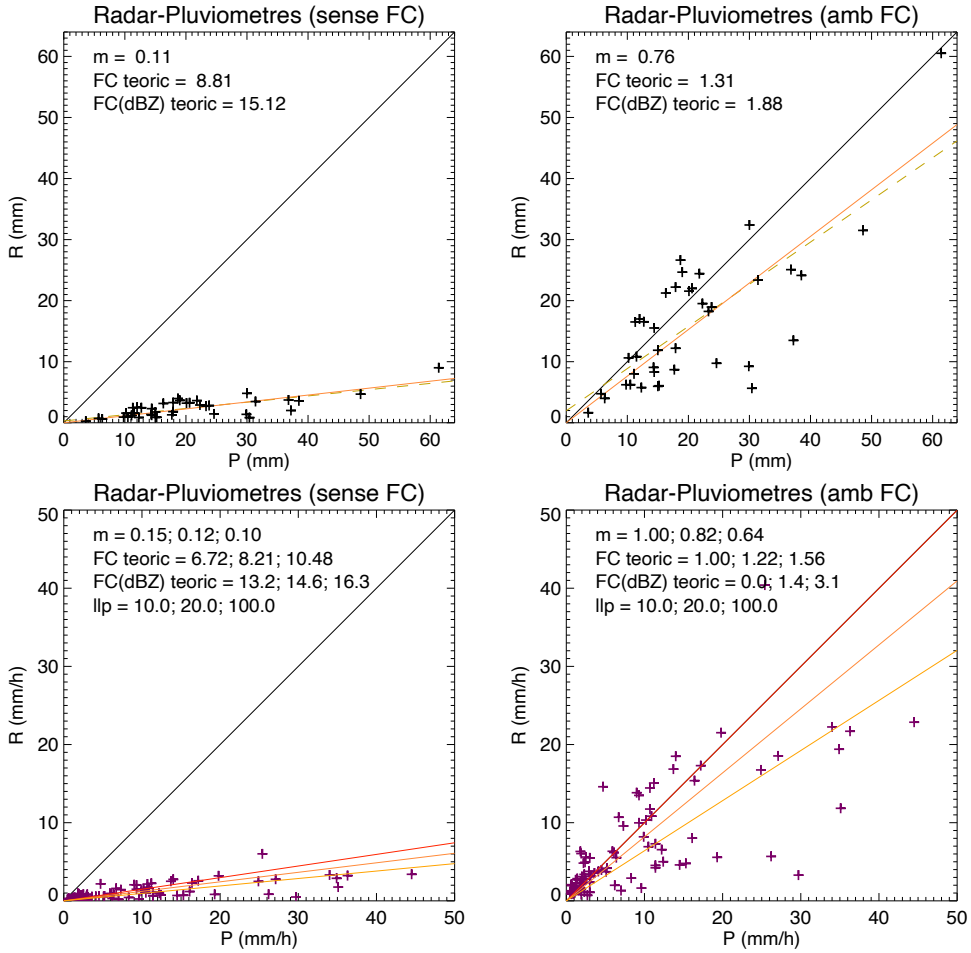


LMI: 20251106 – 20251106

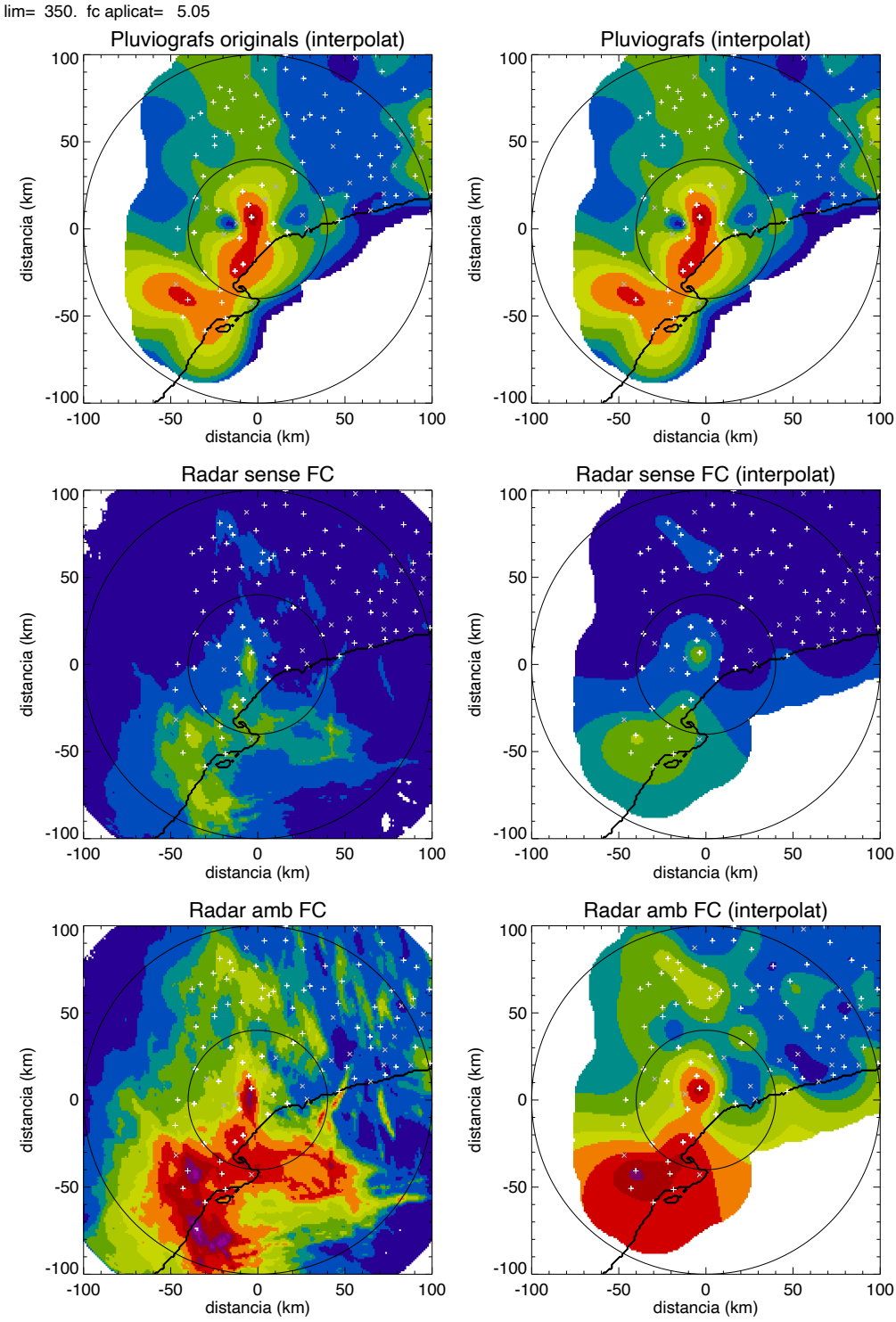
lim= 200. fc aplicat= 6.72



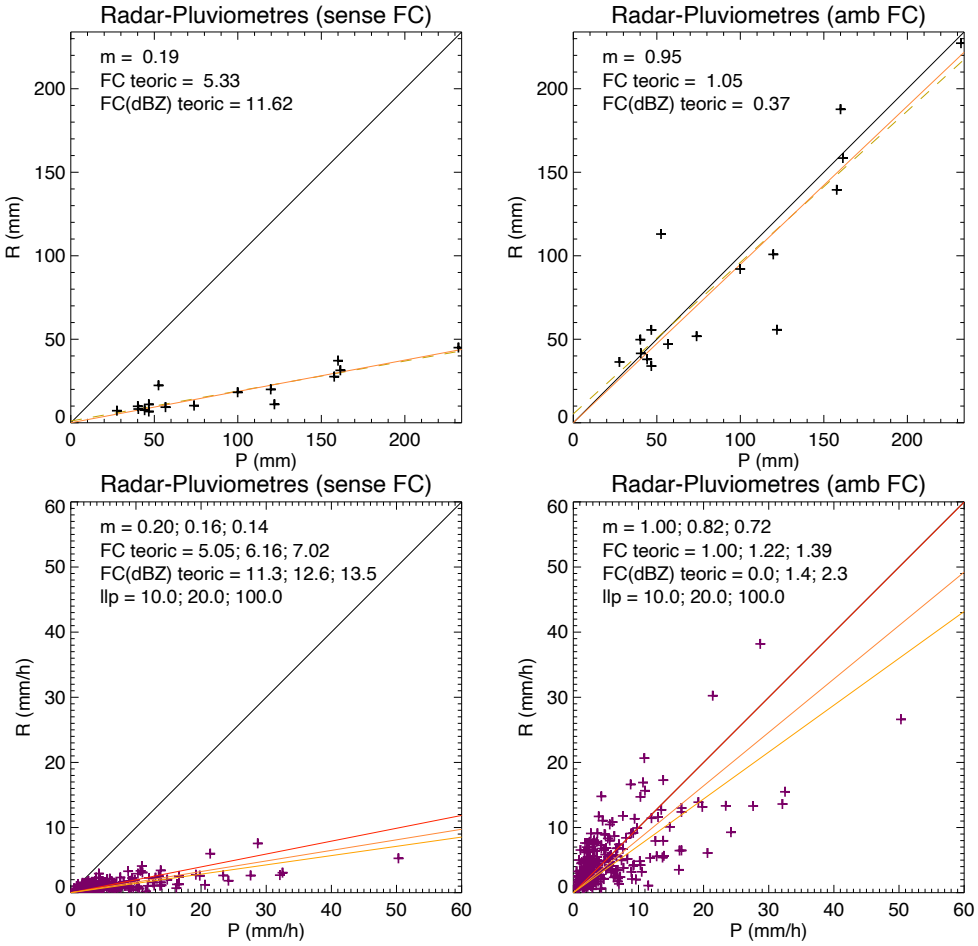
LMI: 20251106 – 20251106



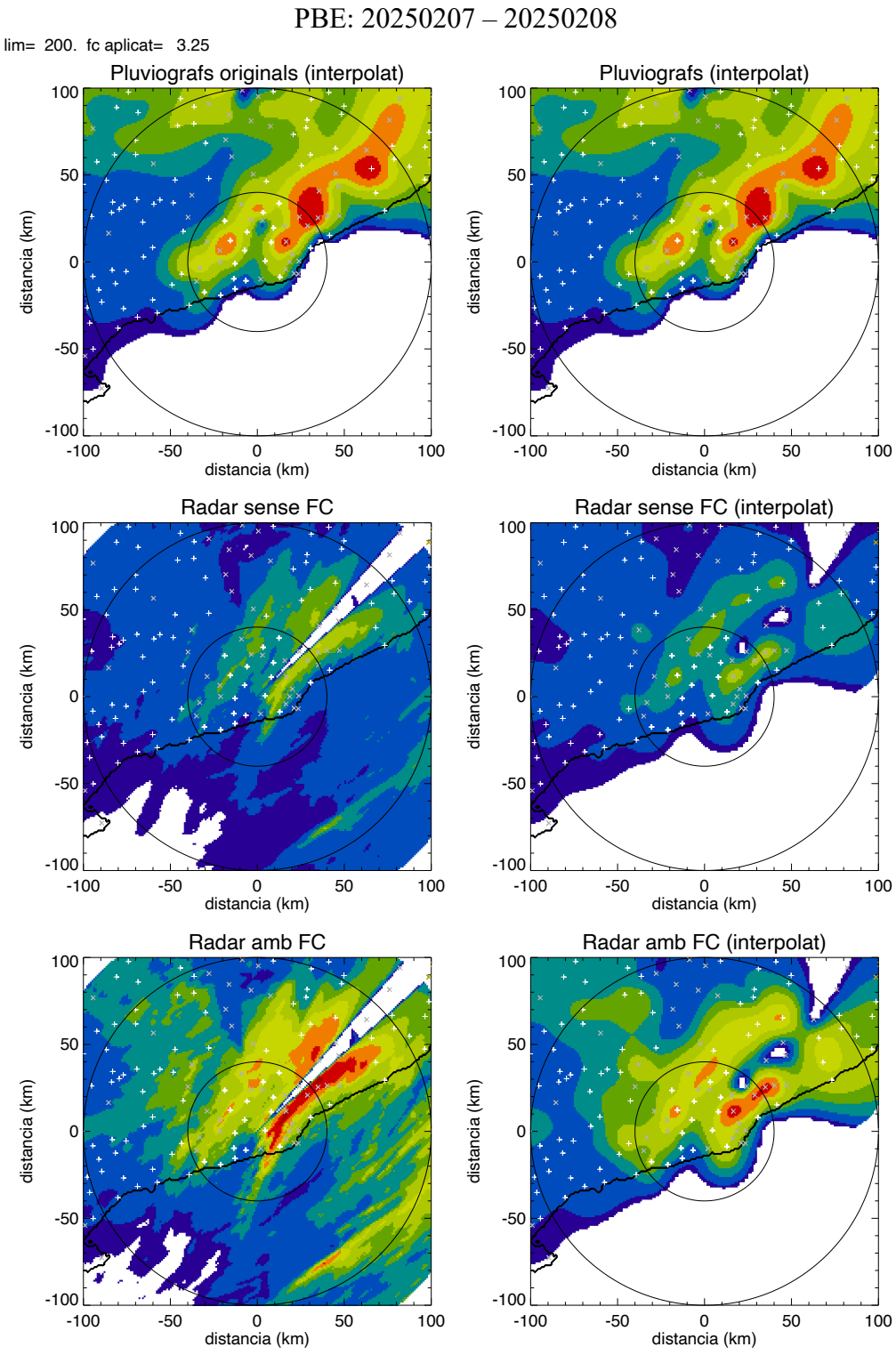
LMI: 20251214 – 20251217



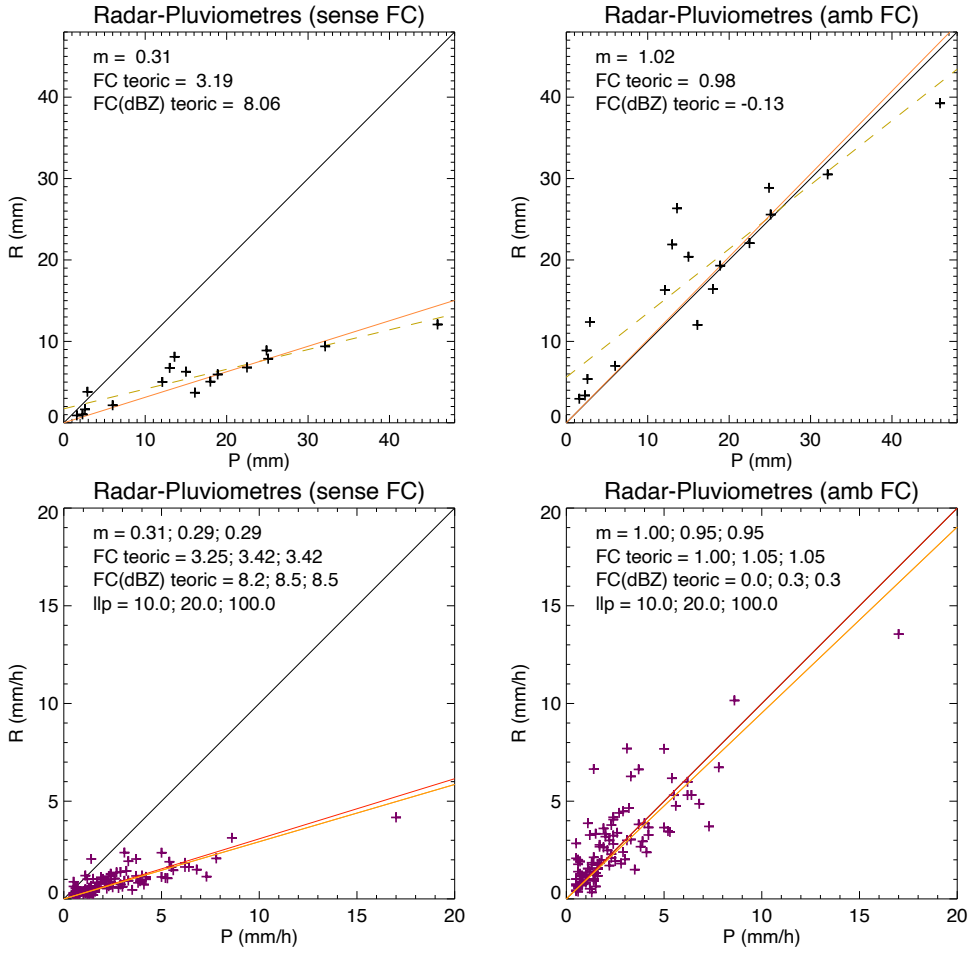
CDV: 20251214 – 20251217



Radar PBE

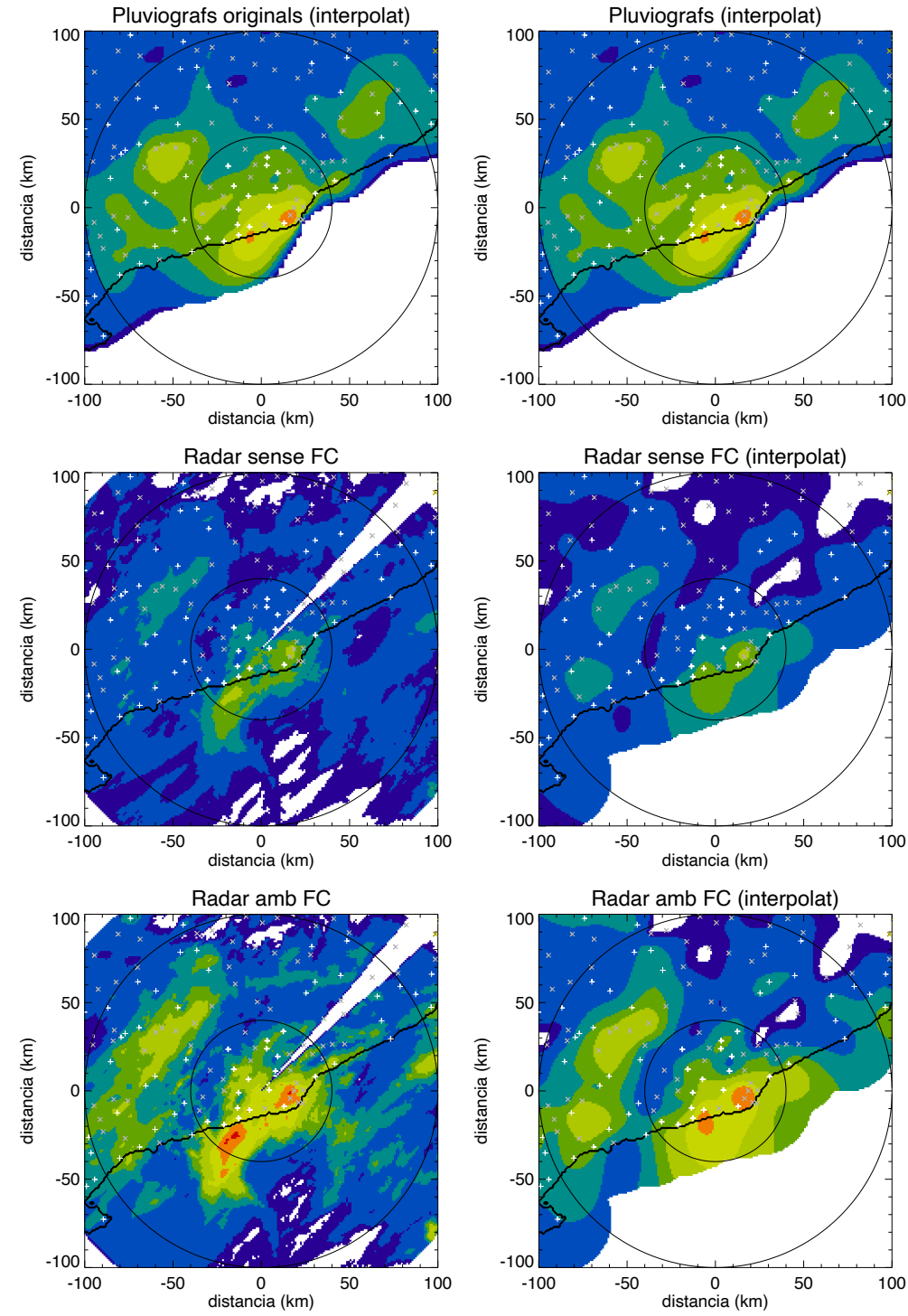

PBE: 20250207 – 20250208
lim= 200. fc aplicat= 3.25
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
100
50
0
-50
-100

PBE: 20250207 – 20250208

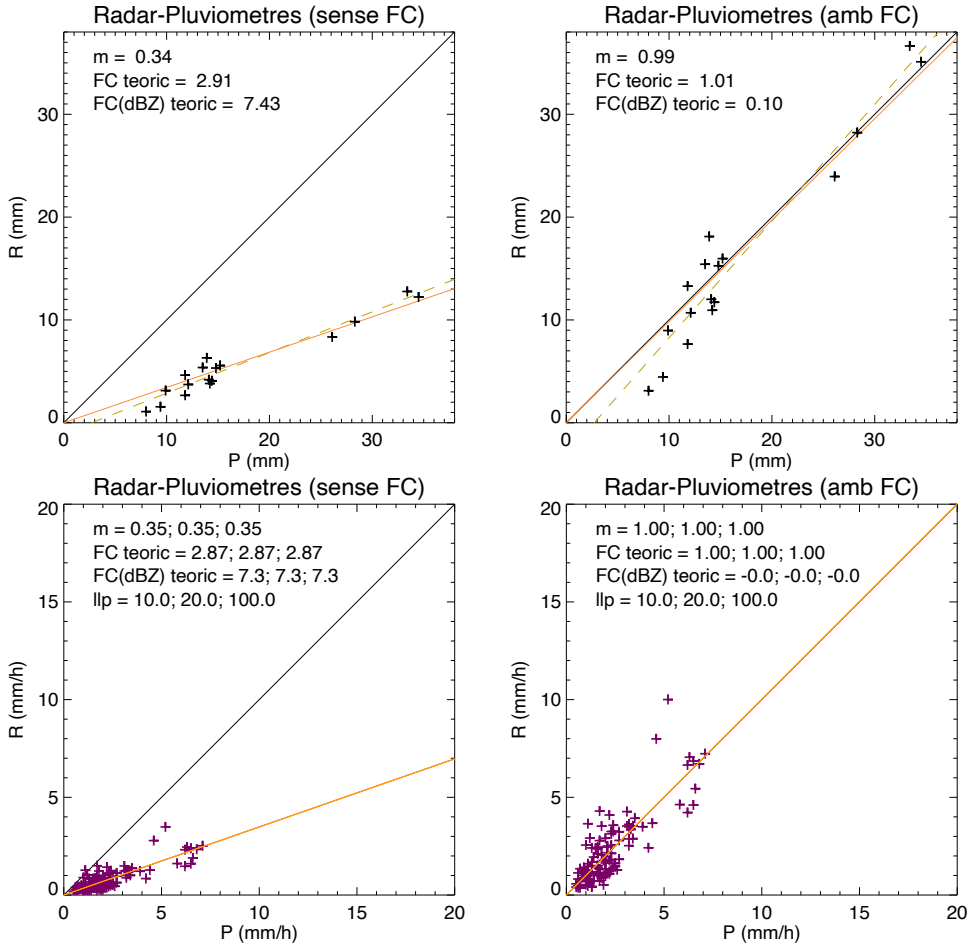


PBE: 20250212 – 20250212

lim= 200. fc aplicat= 2.87

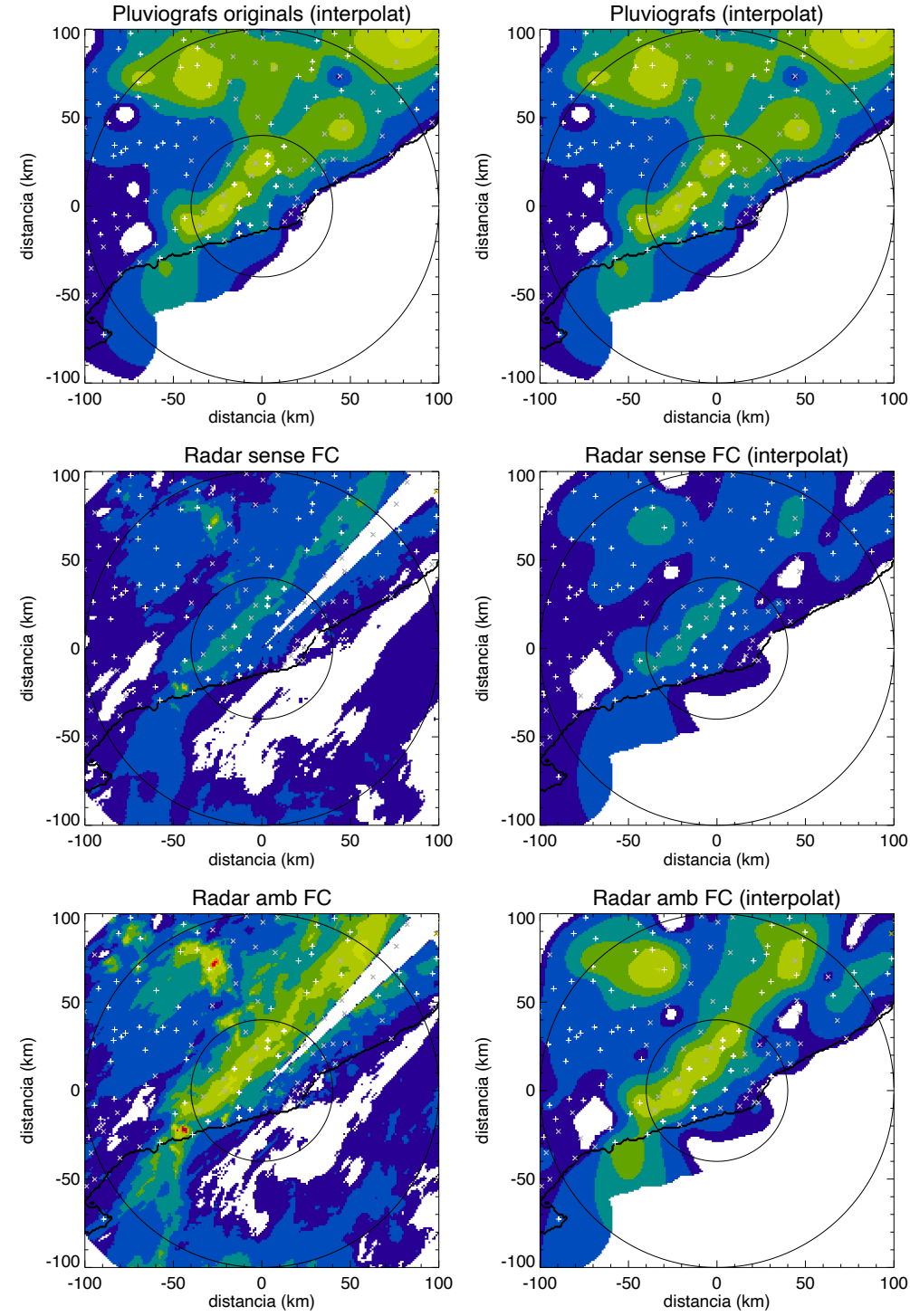


PBE: 20250212 – 20250212

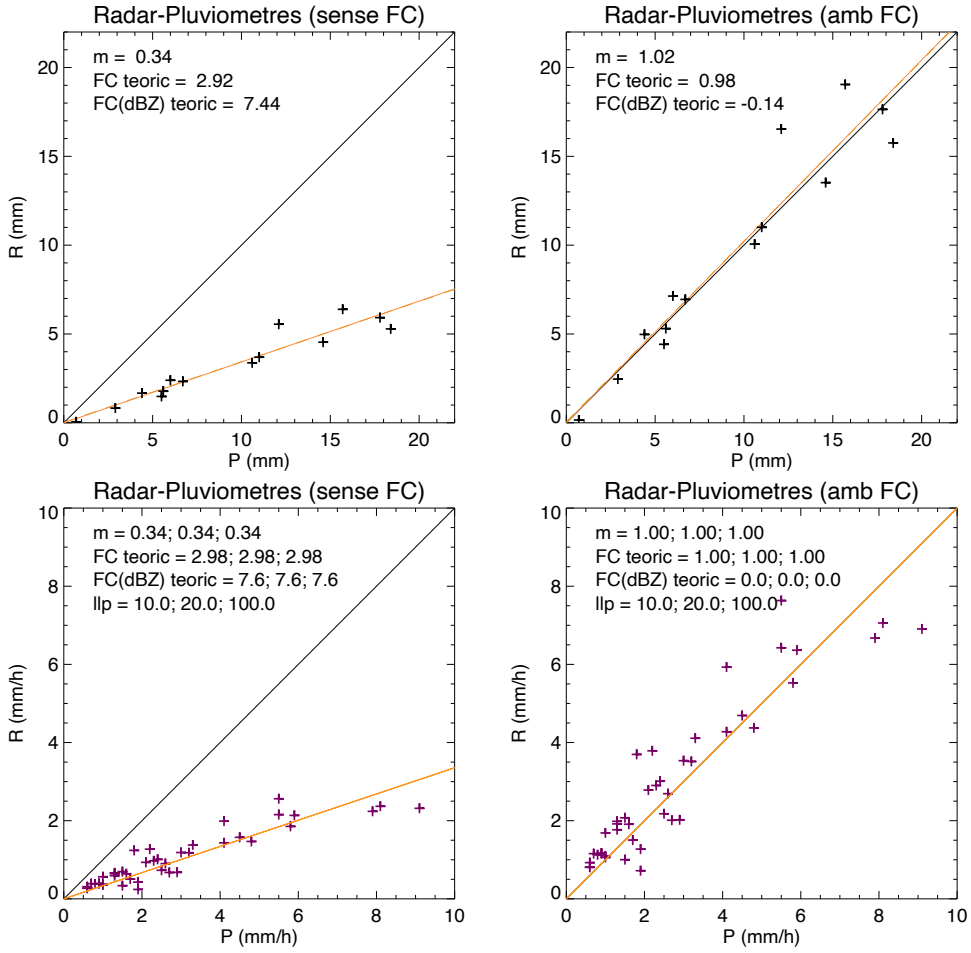


PBE: 20250222 – 20250222

lim= 150. fc aplicat= 2.98

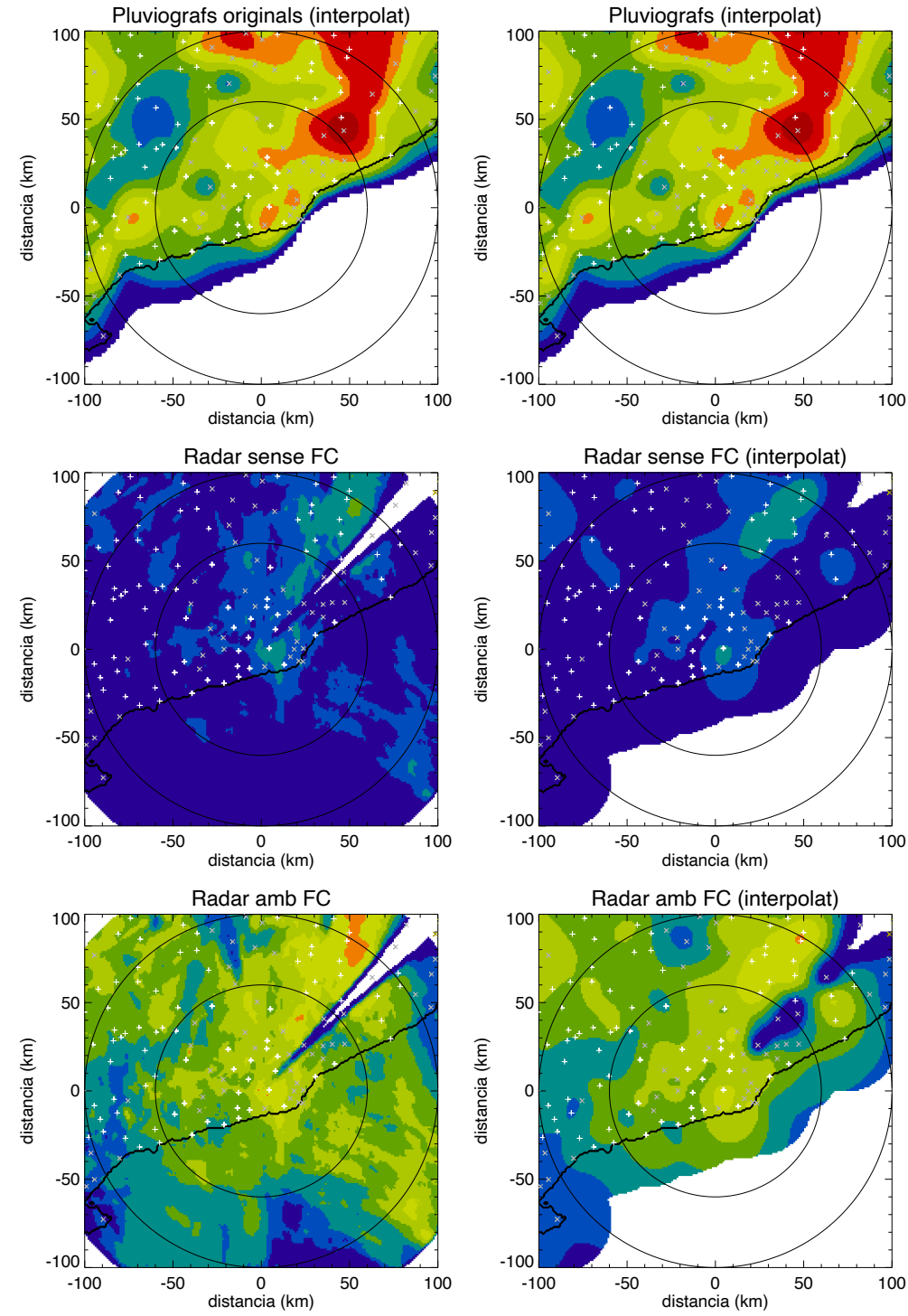


PBE: 20250222 – 20250222

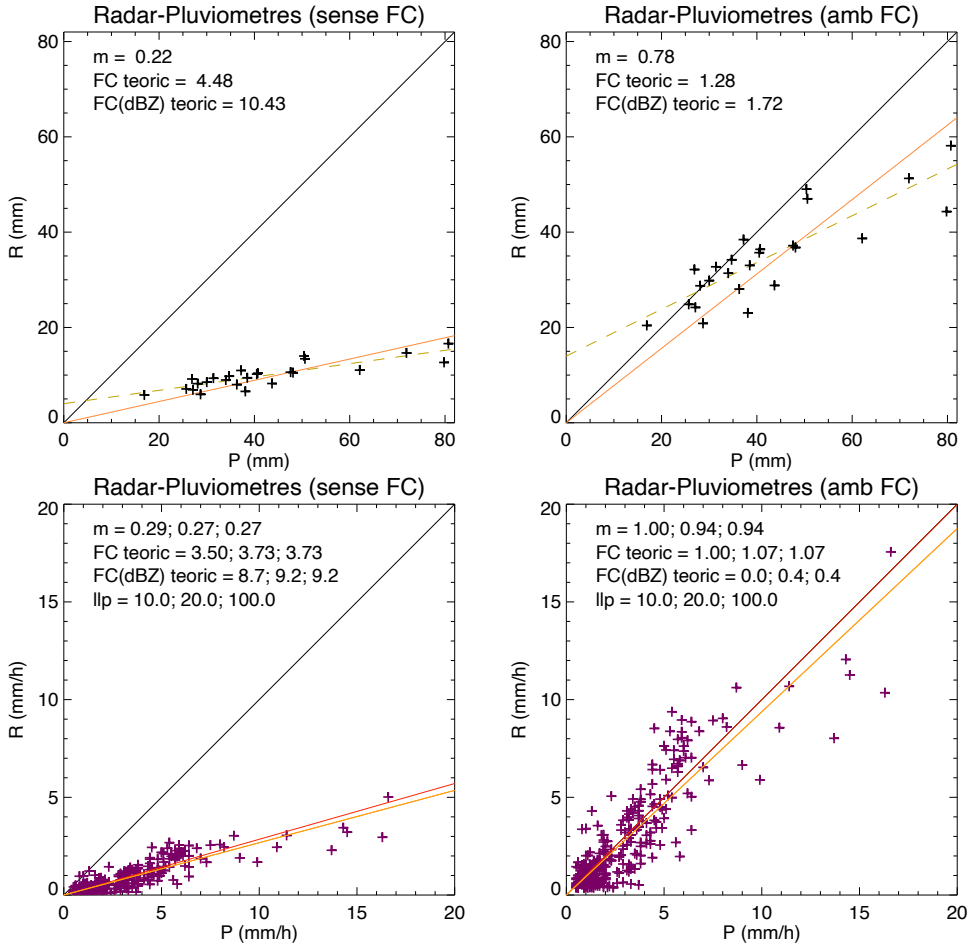


PBE: 20250306 – 20250309

lim= 300. fc aplicat= 3.50

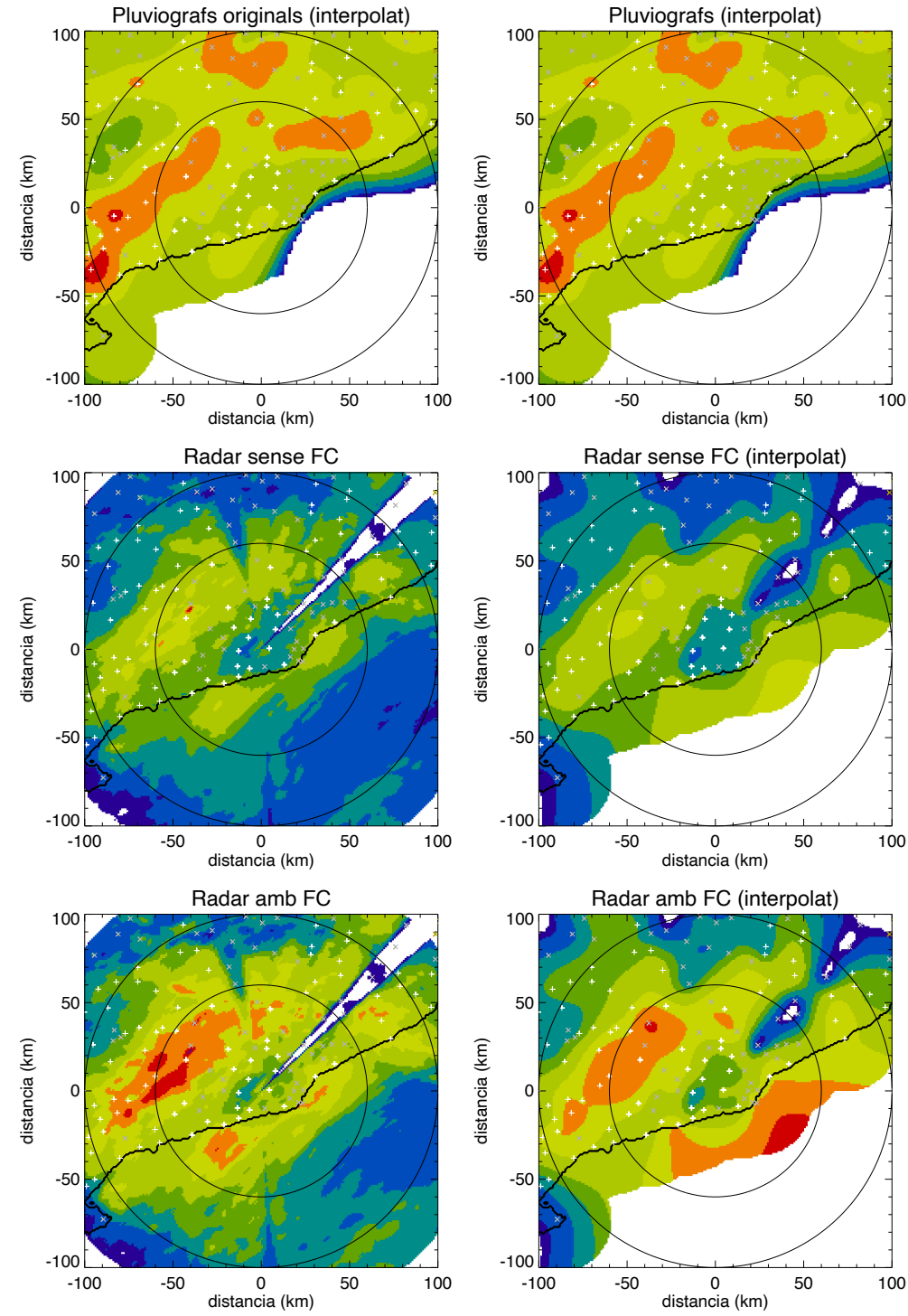


PBE: 20250306 – 20250309

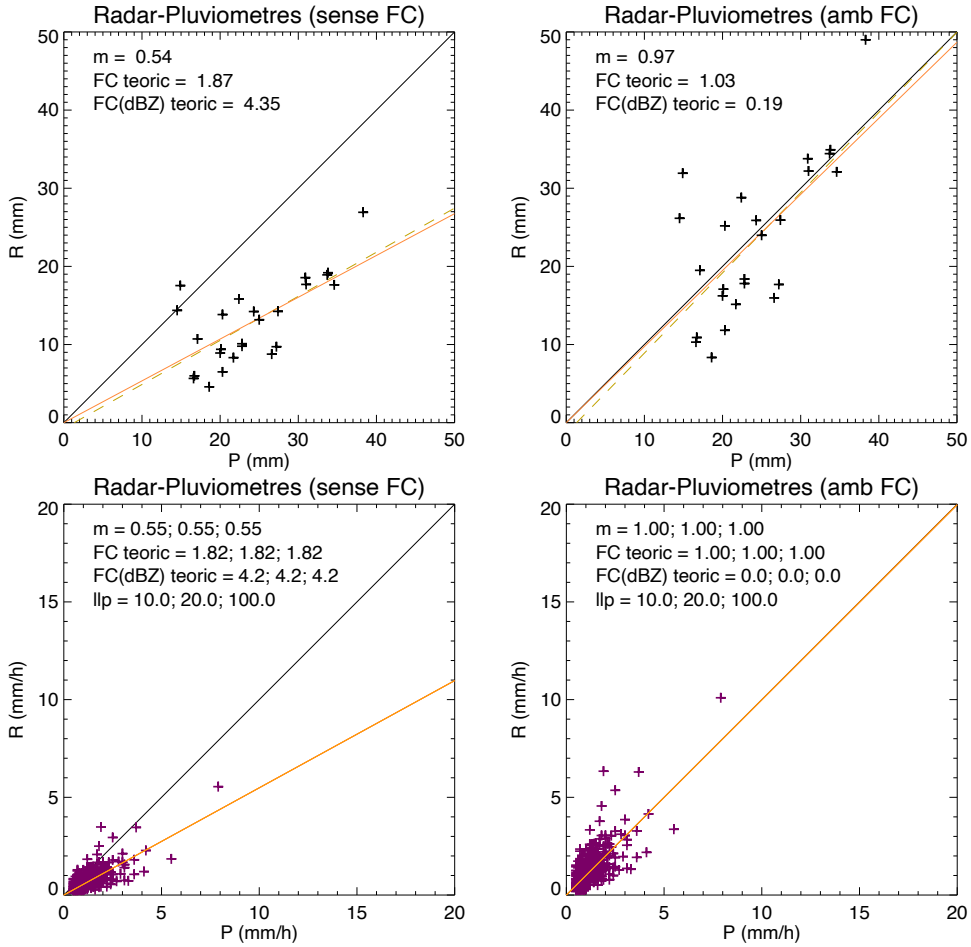


PBE: 20250311 – 20250314

lim= 200. fc aplicat= 1.82

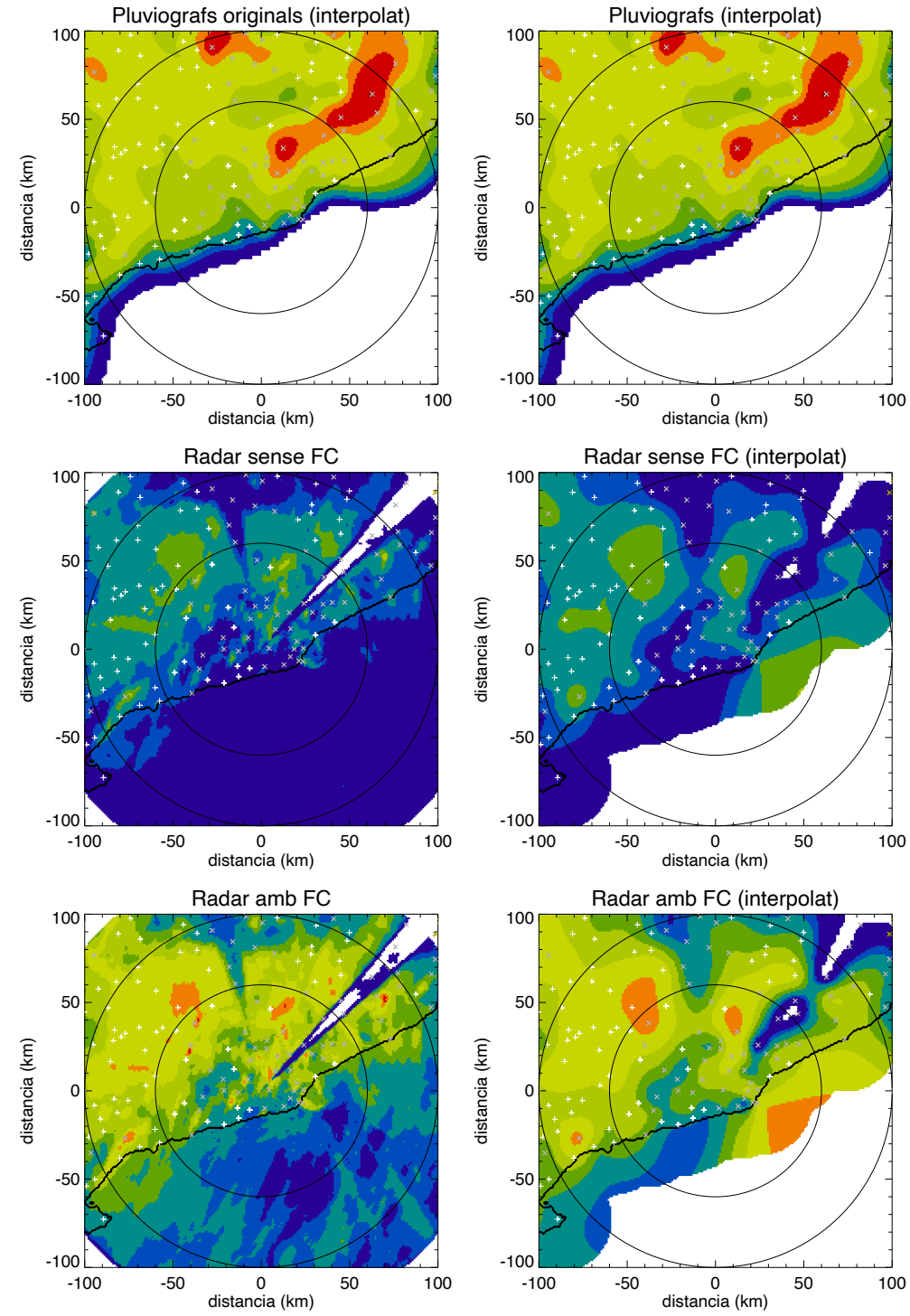


PBE: 20250311 – 20250314

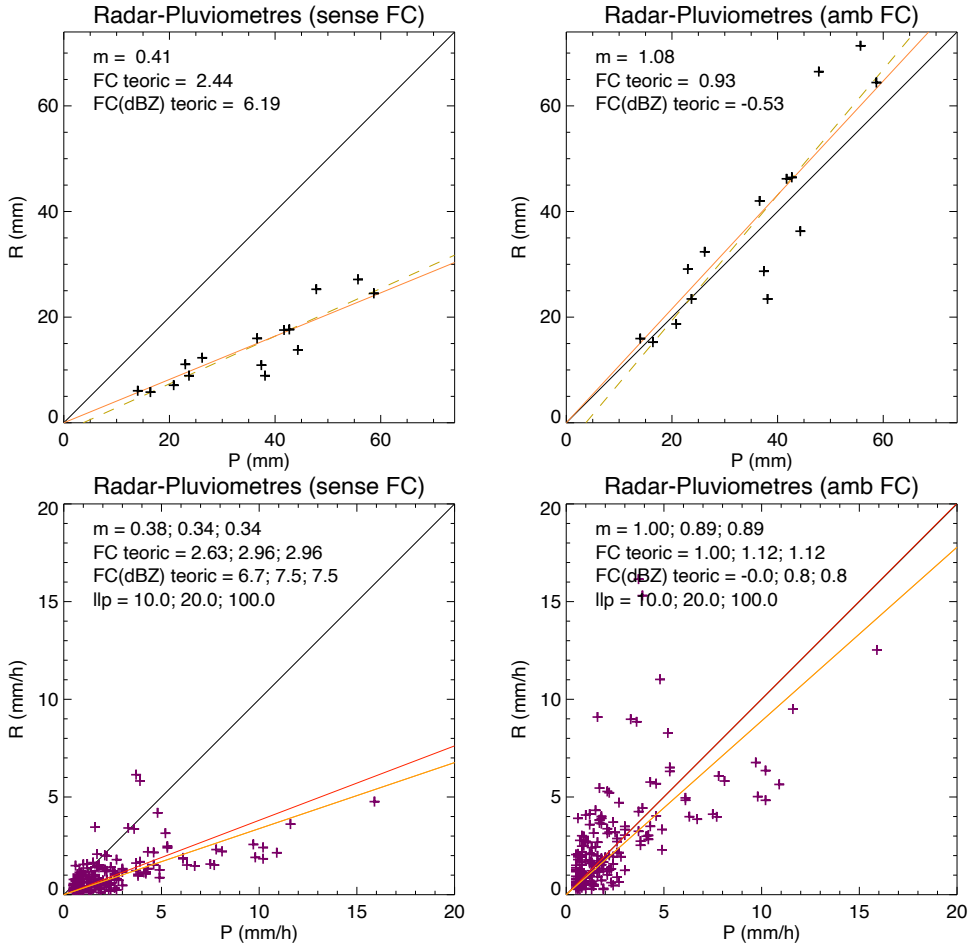


PBE: 20250318 – 20250325

lim= 300. fc aplicat= 2.63

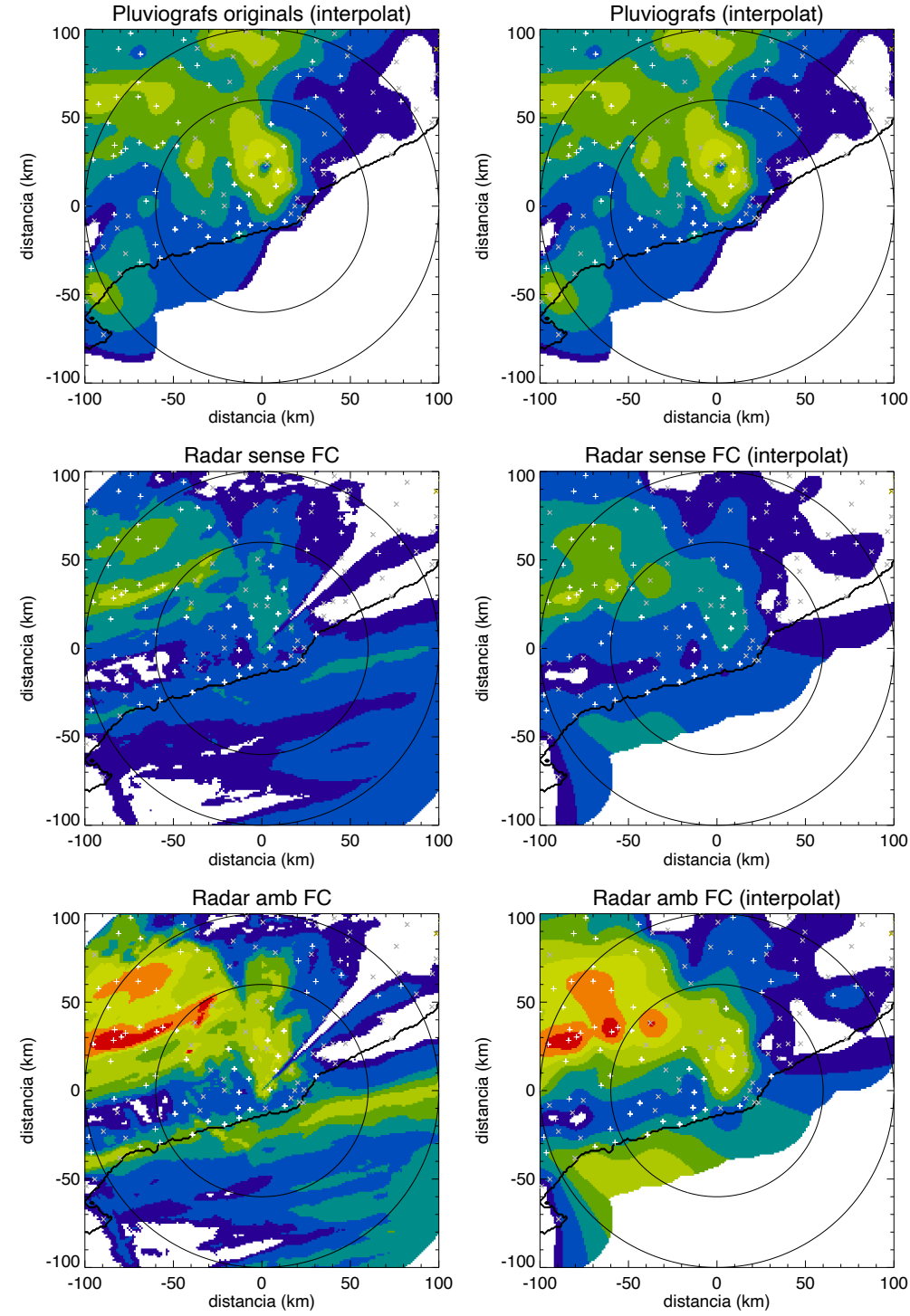


PBE: 20250318 – 20250325

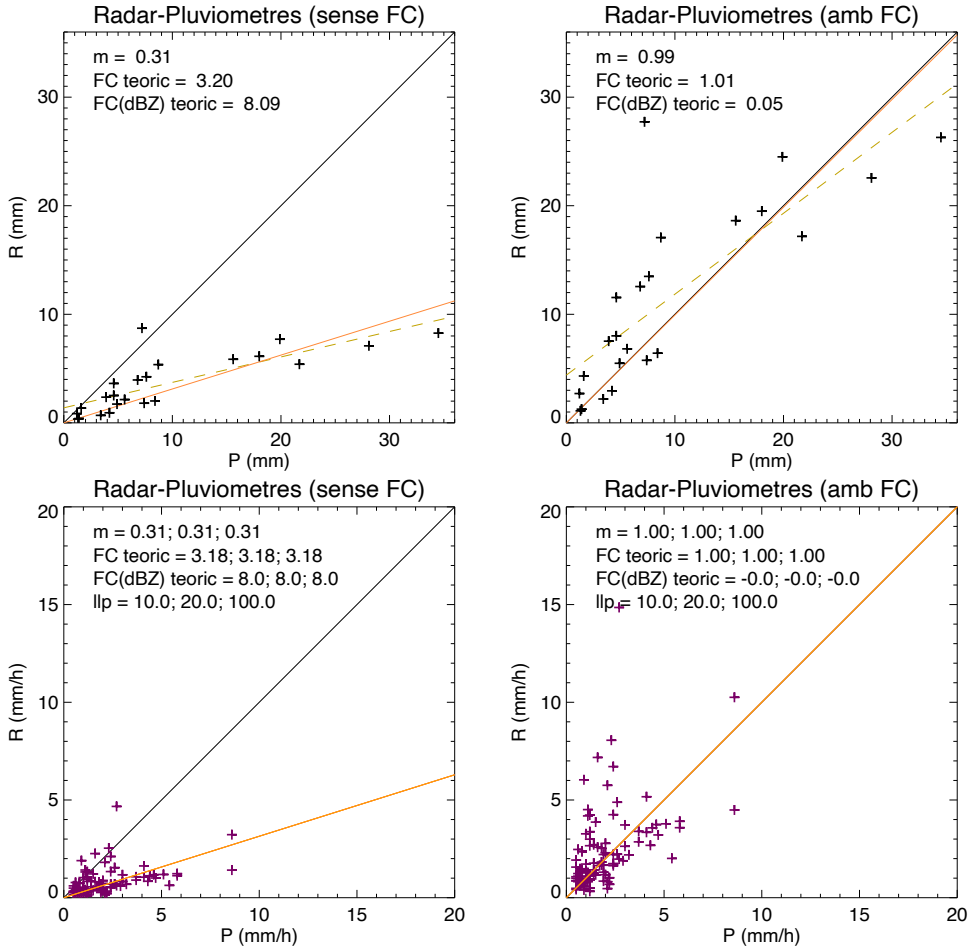


PBE: 20250402 – 20250402

lim= 150. fc aplicat= 3.18

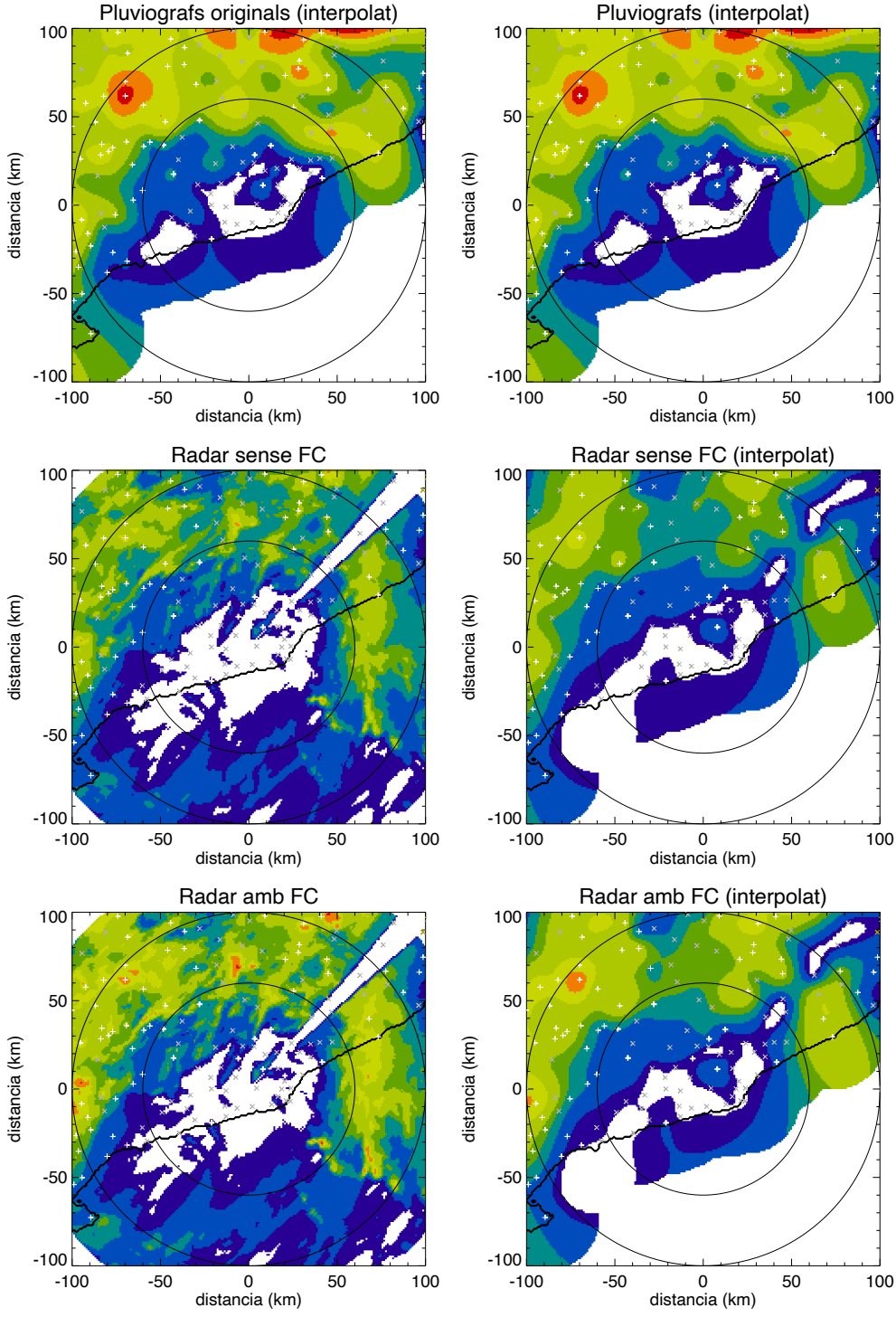


PBE: 20250402 – 20250402

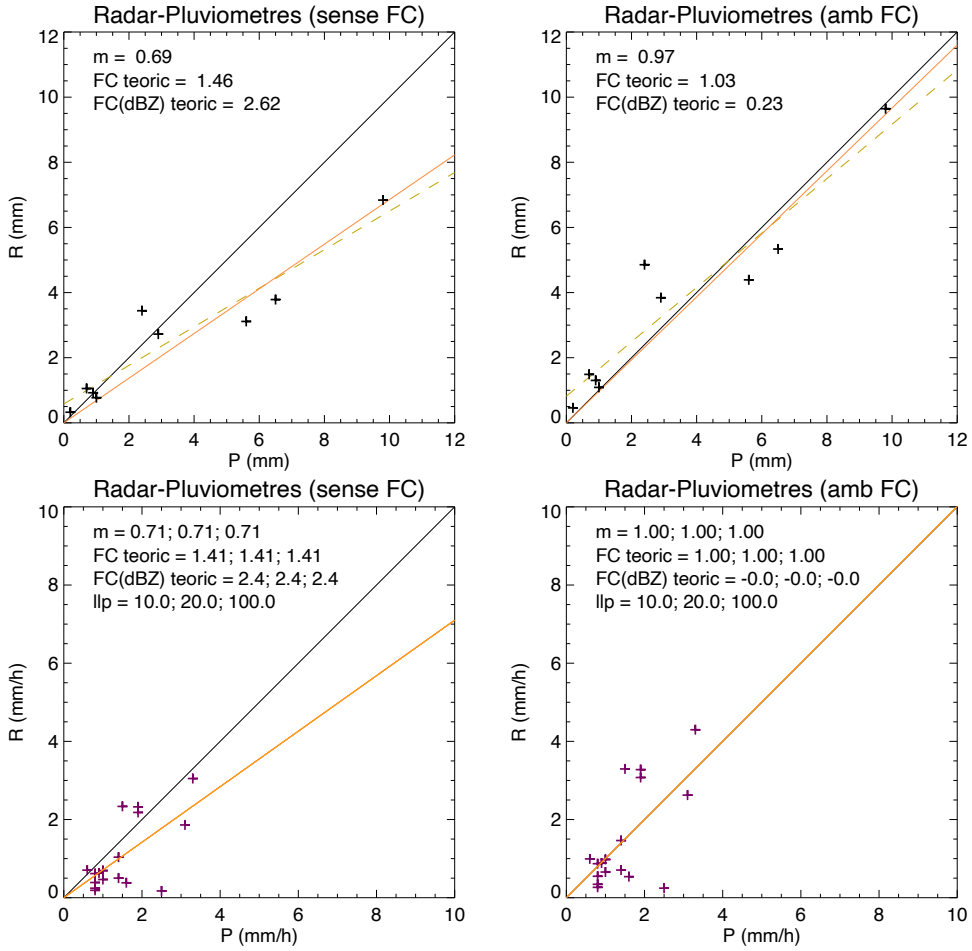


PBE: 20250412 – 20250416

lim= 200. fc aplicat= 1.41

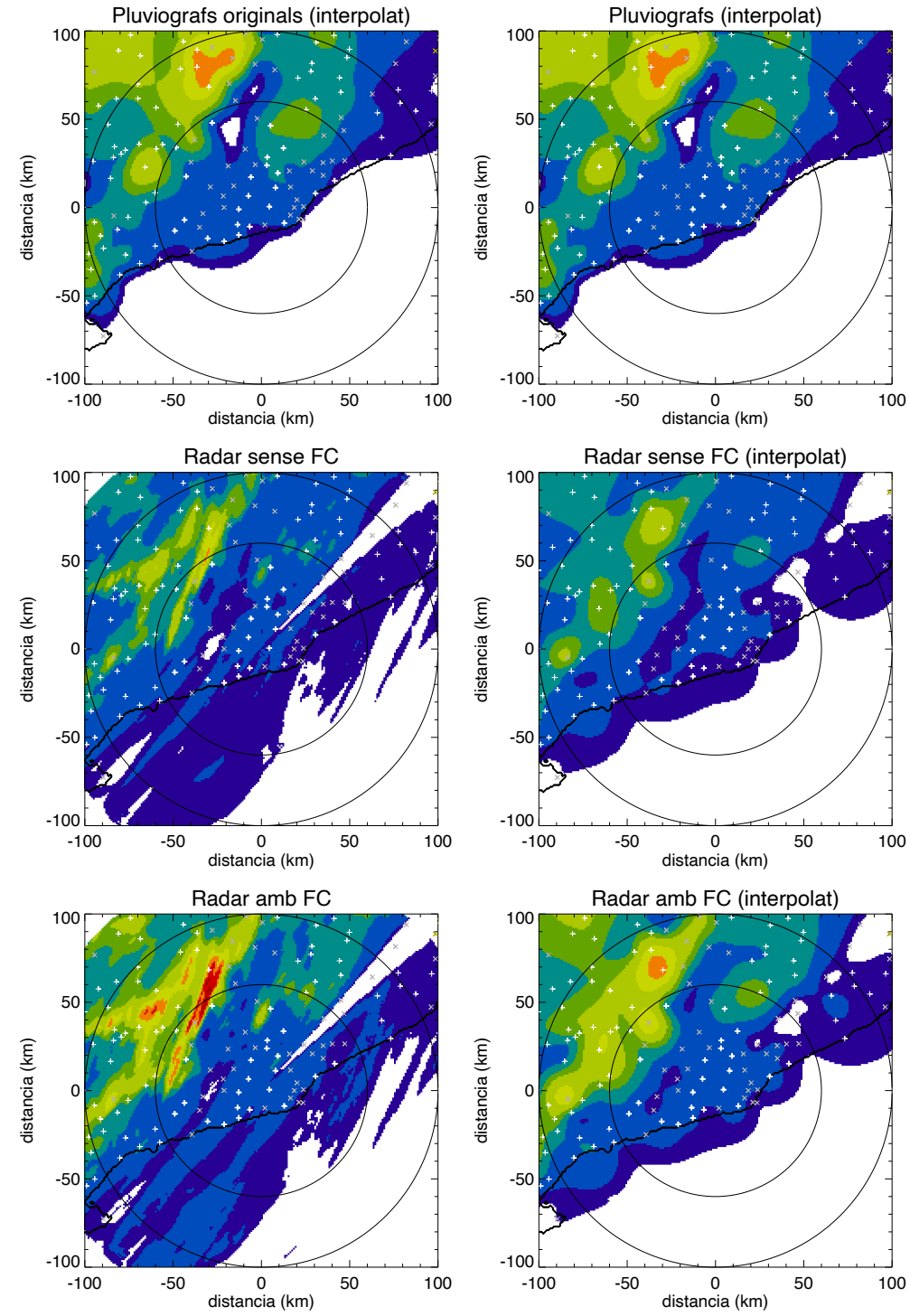


PBE: 20250412 – 20250416

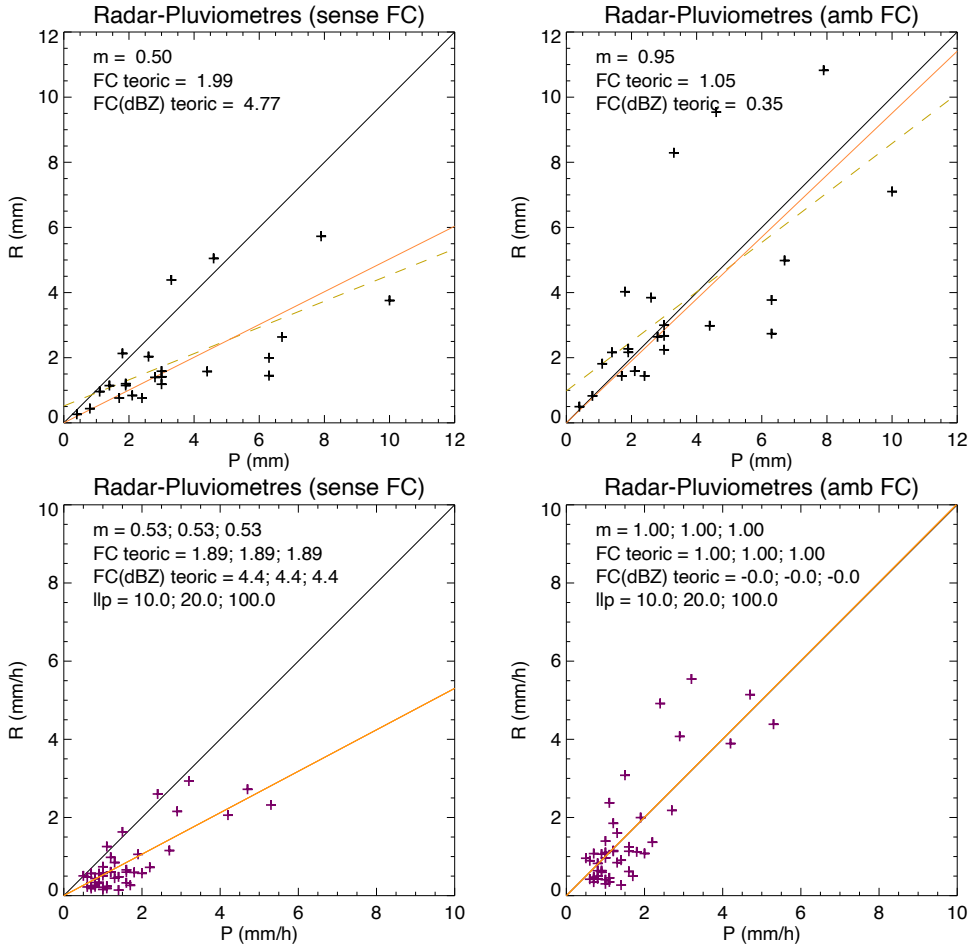


PBE: 20250419 – 20250419

lim= 150. fc aplicat= 1.89

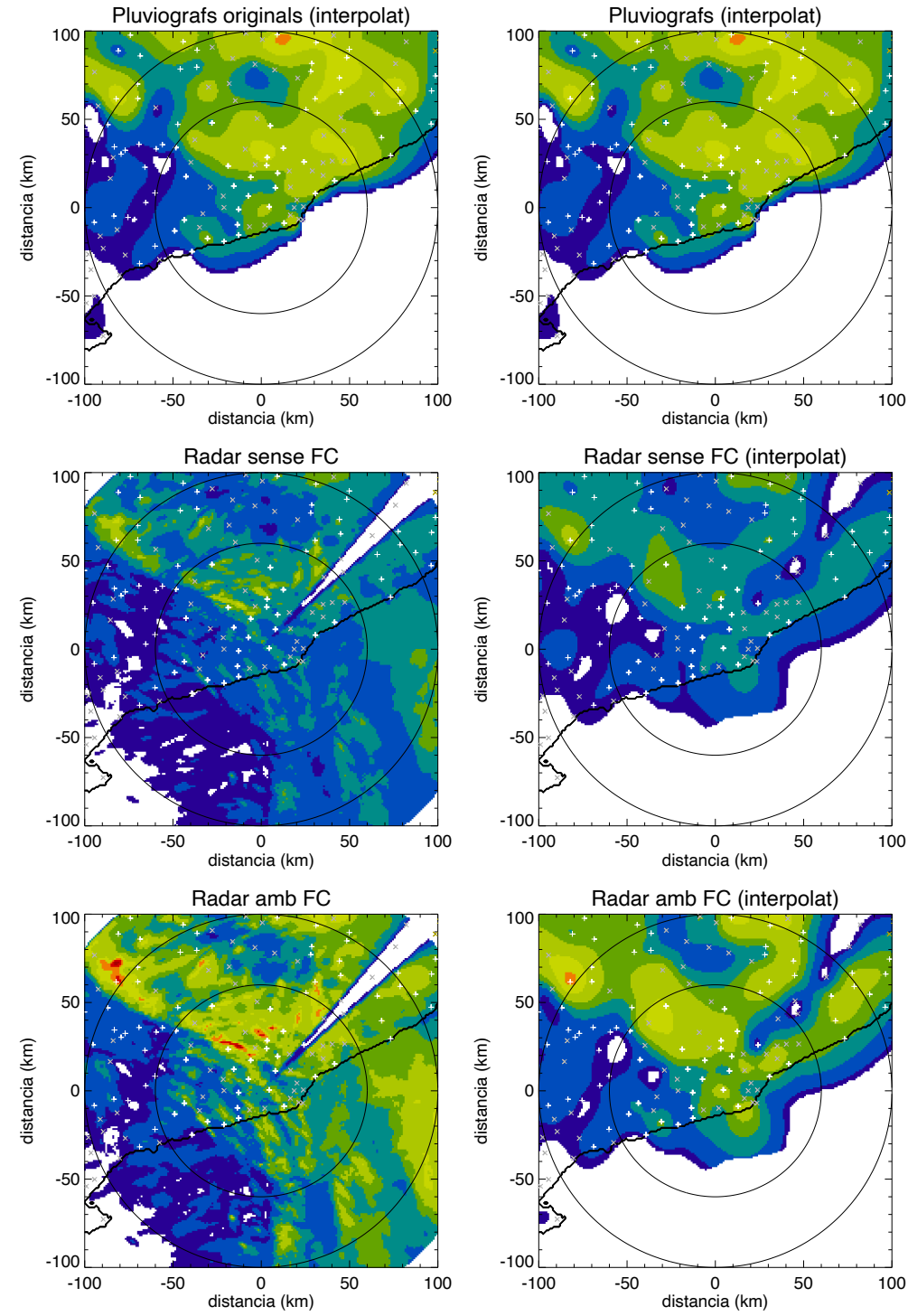


PBE: 20250419 – 20250419

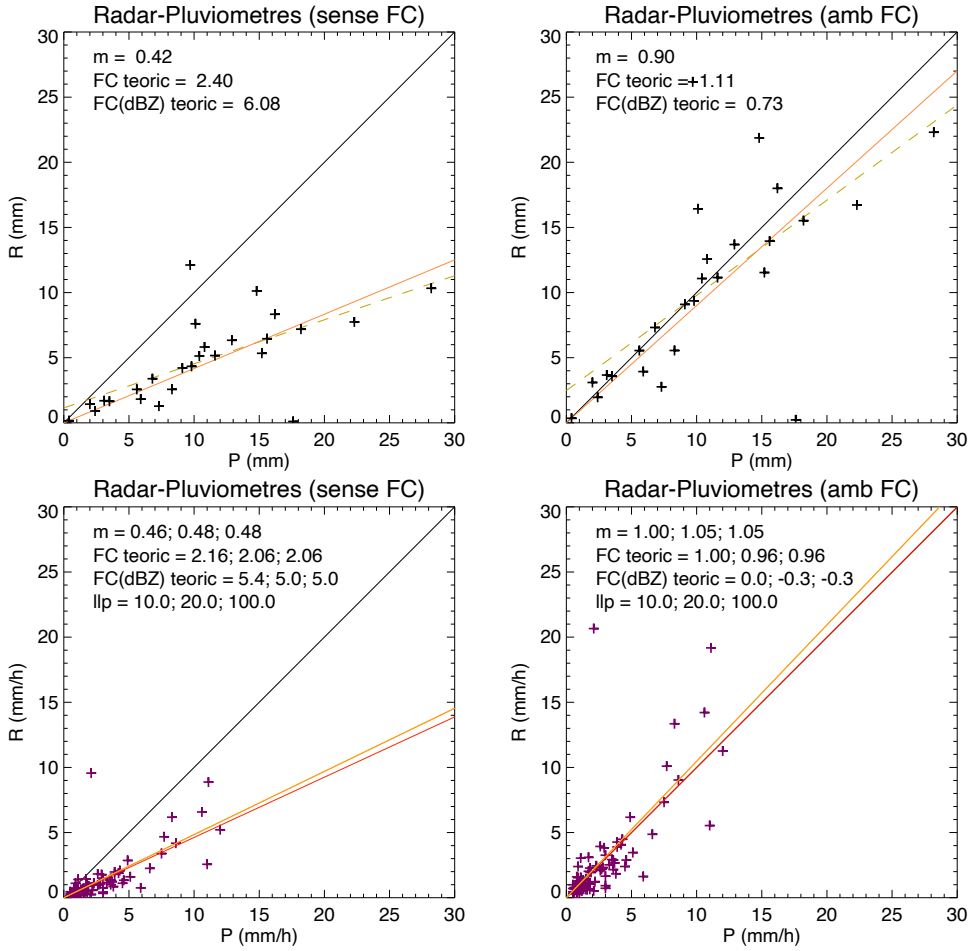


PBE: 20250426 – 20250427

lim= 150. fc aplicat= 2.16

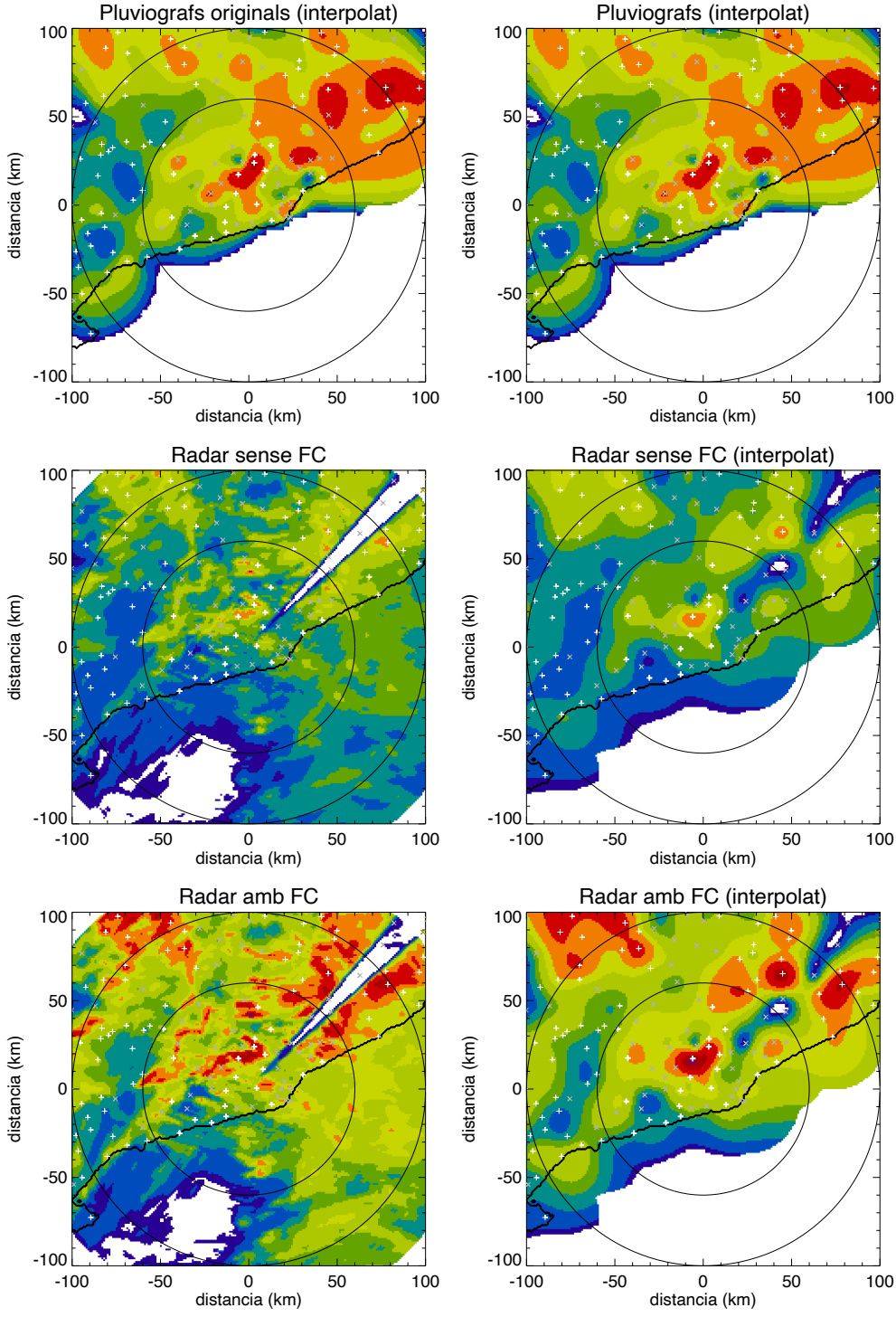


PBE: 20250426 – 20250427

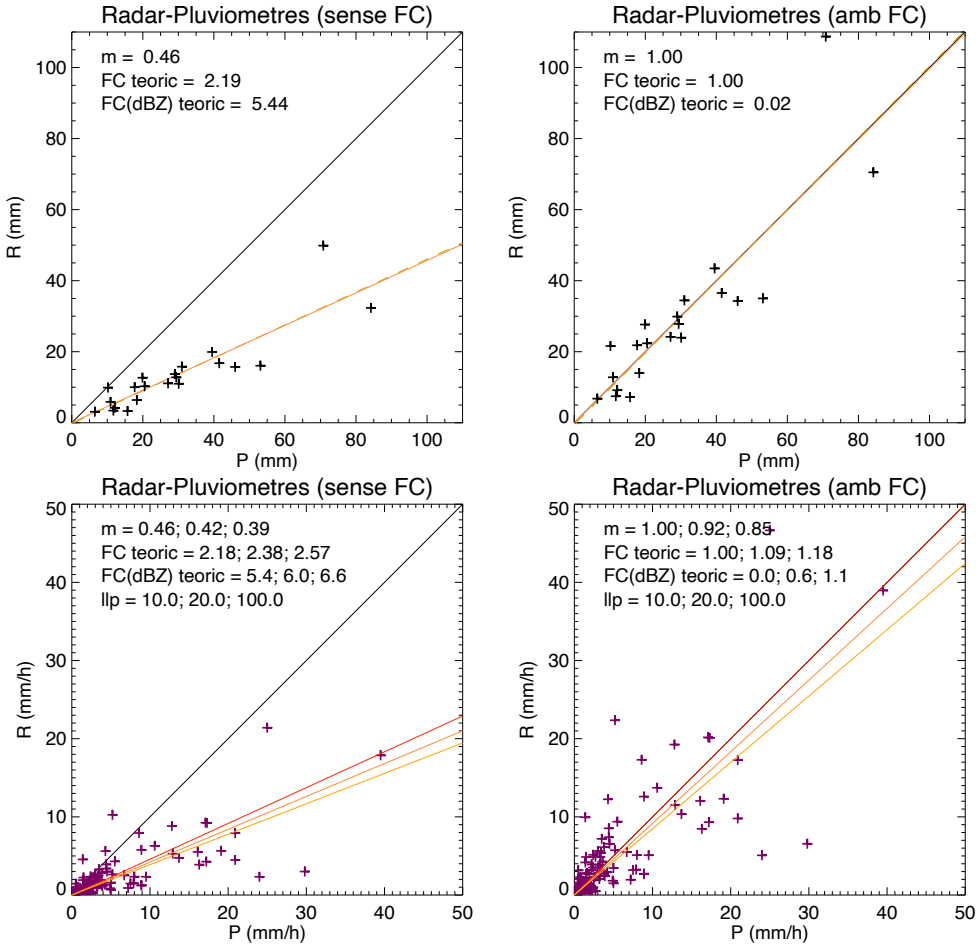


PBE: 20250504 – 20250506

lim= 200. fc aplicat= 2.18

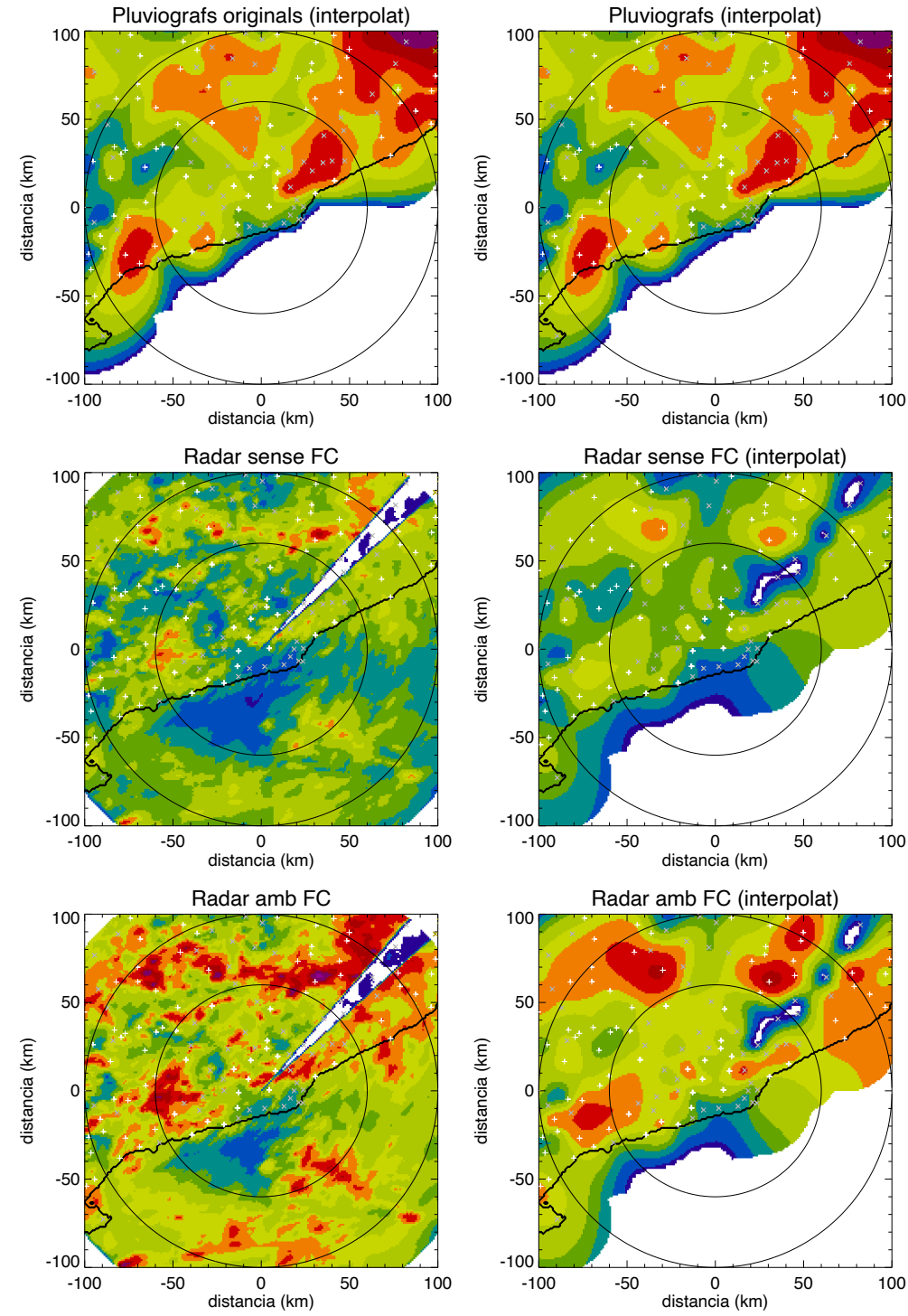


PBE: 20250504 – 20250506

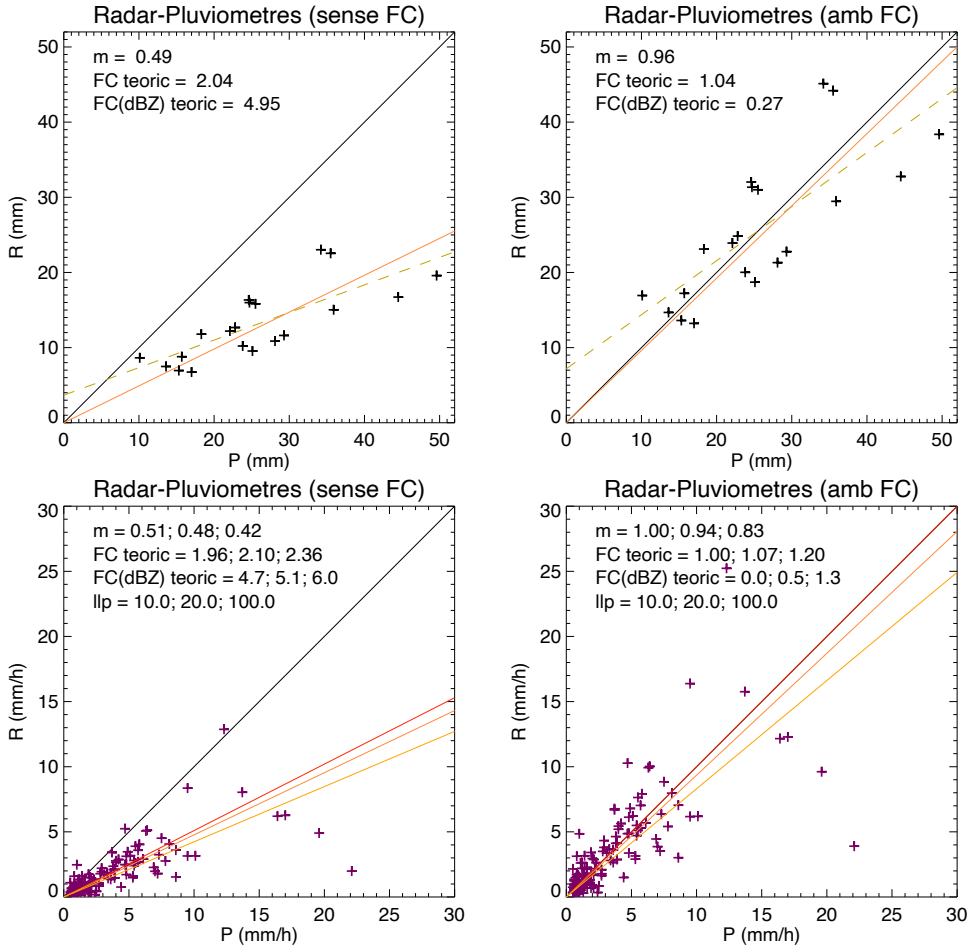


PBE: 20250508 – 20250514

lim= 200. fc aplicat= 1.96

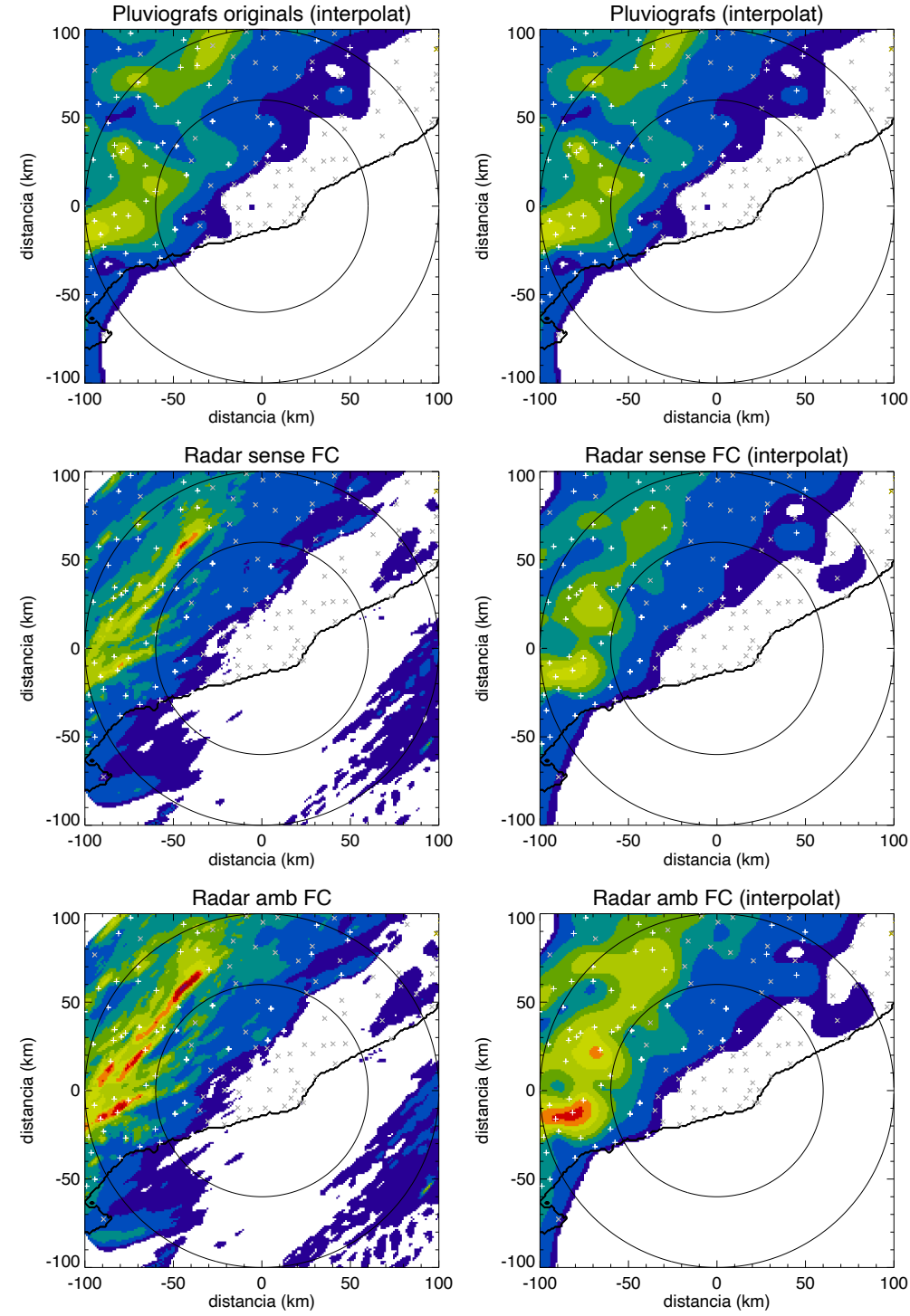


PBE: 20250508 – 20250514

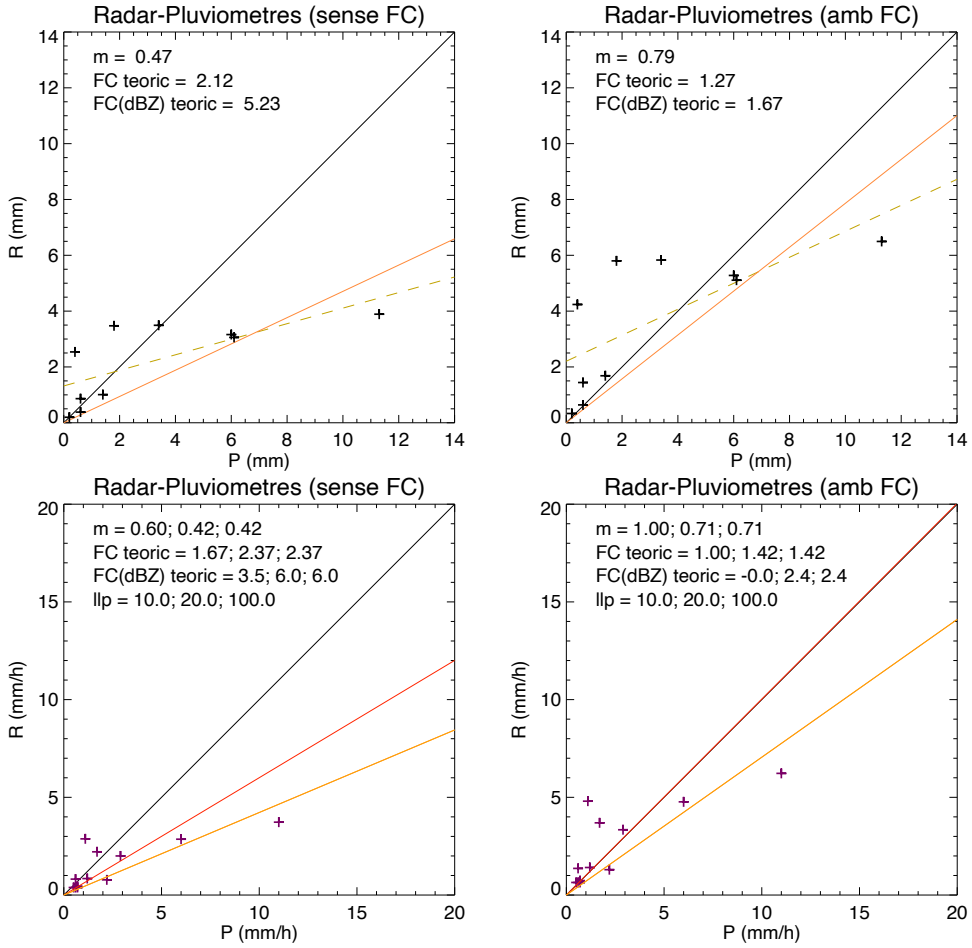


PBE: 20250519 – 20250519

lim= 150. fc aplicat= 1.67

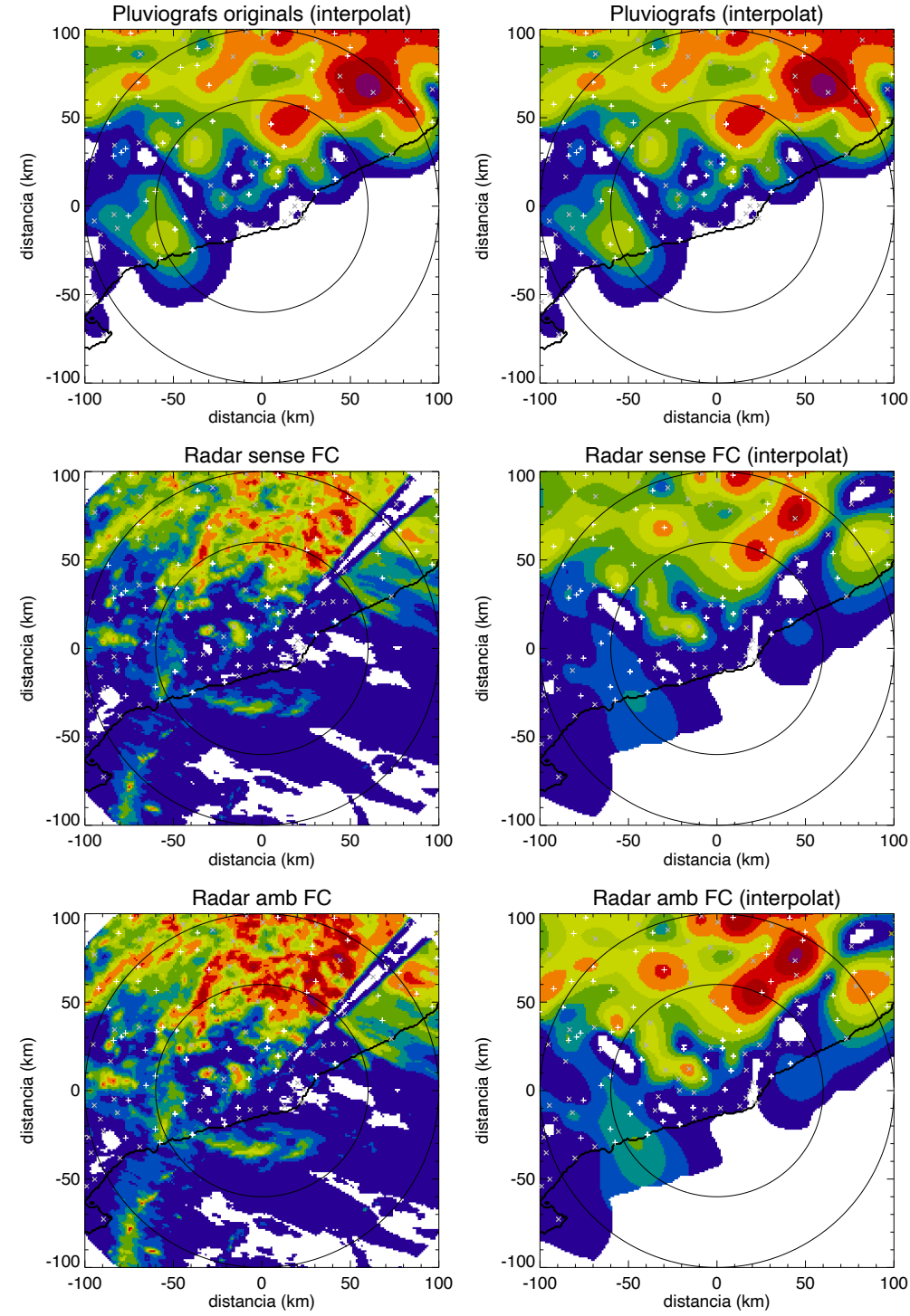


PBE: 20250519 – 20250519

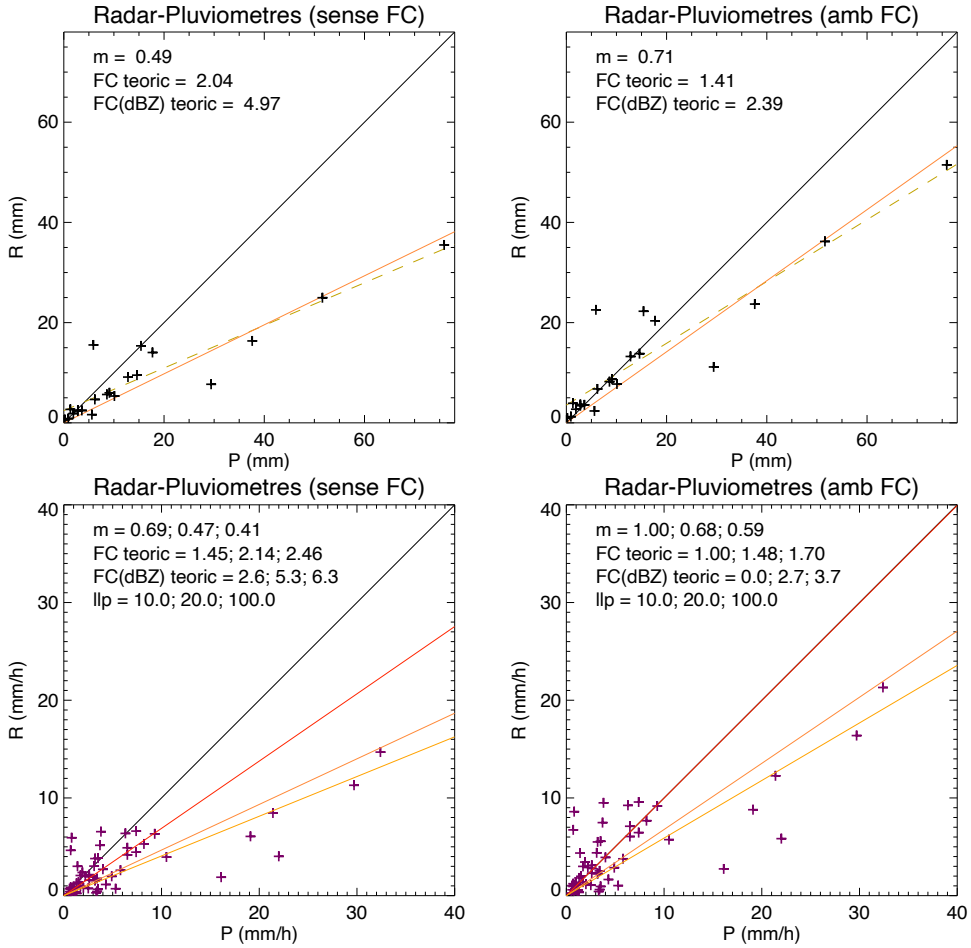


PBE: 20250630 – 20250707

lim= 250. fc aplicat= 1.45

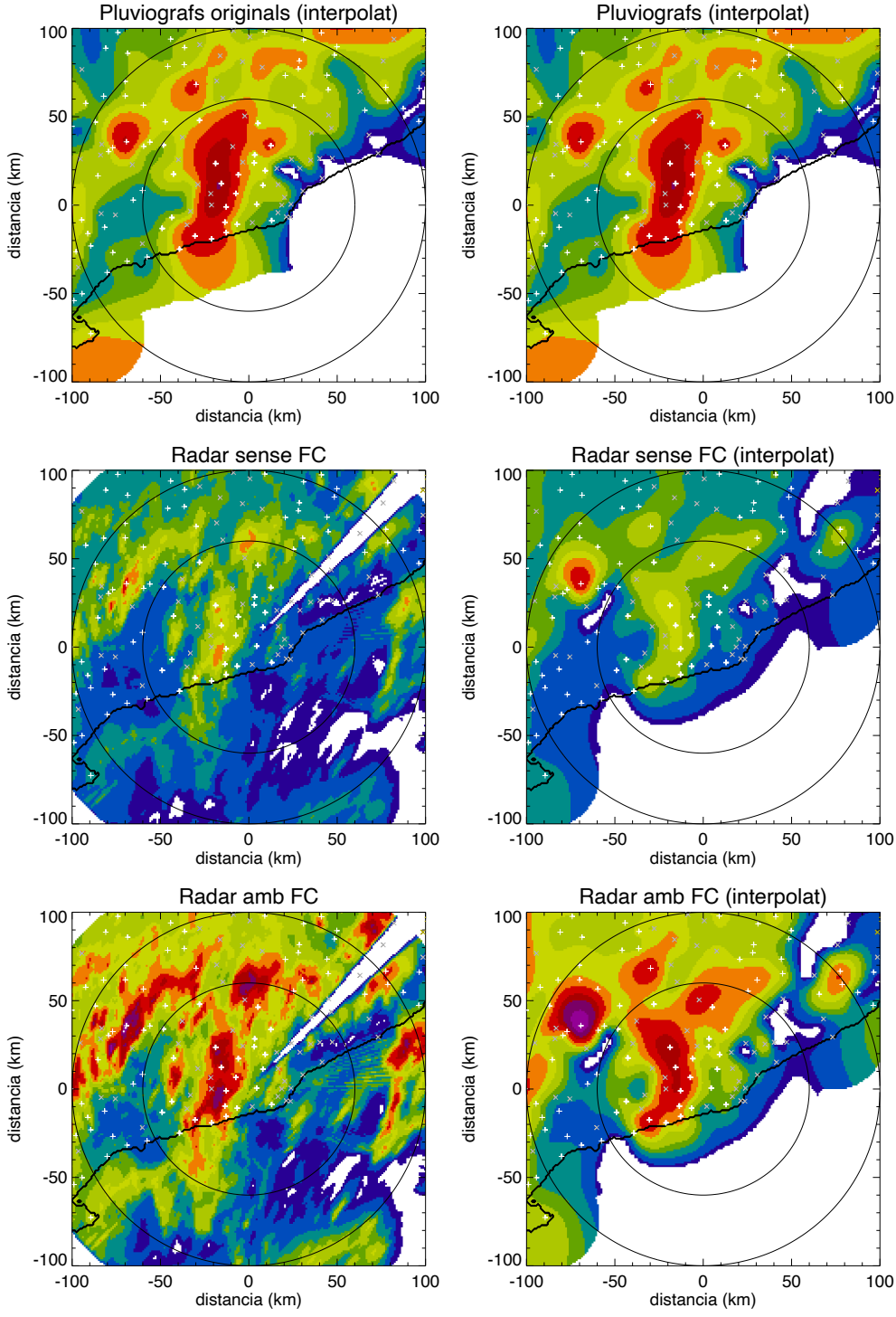


PBE: 20250630 – 20250707

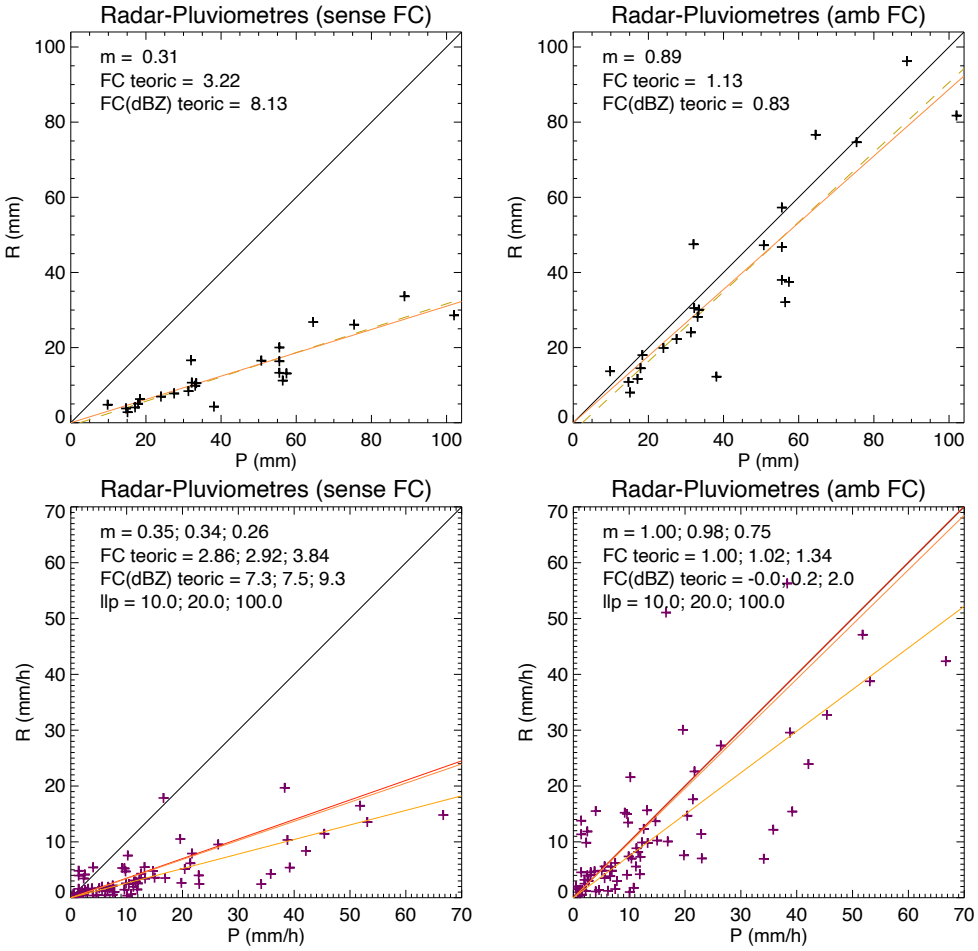


PBE: 20250712 – 20250712

lim= 200. fc aplicat= 2.86

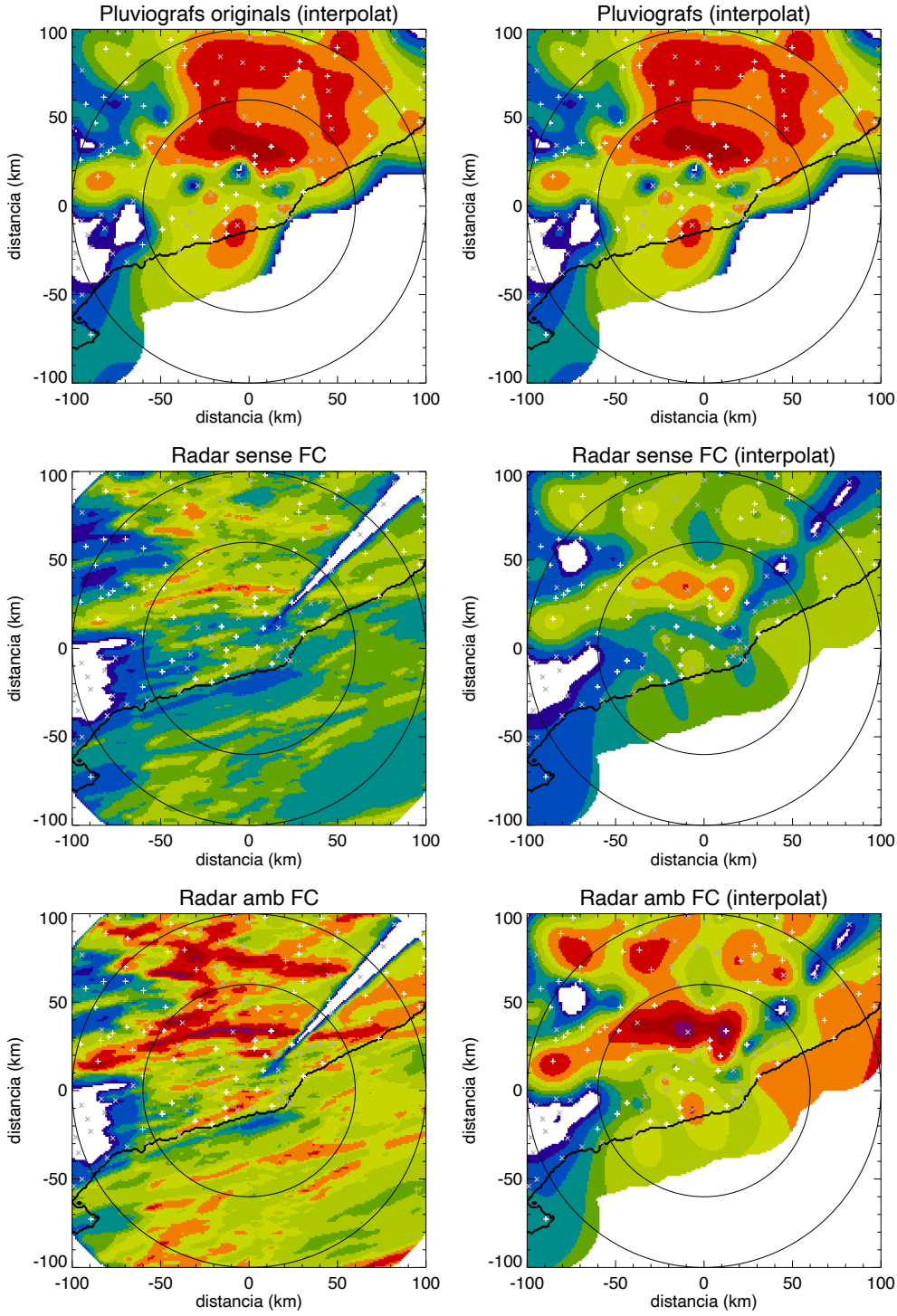


PBE: 20250712 – 20250712

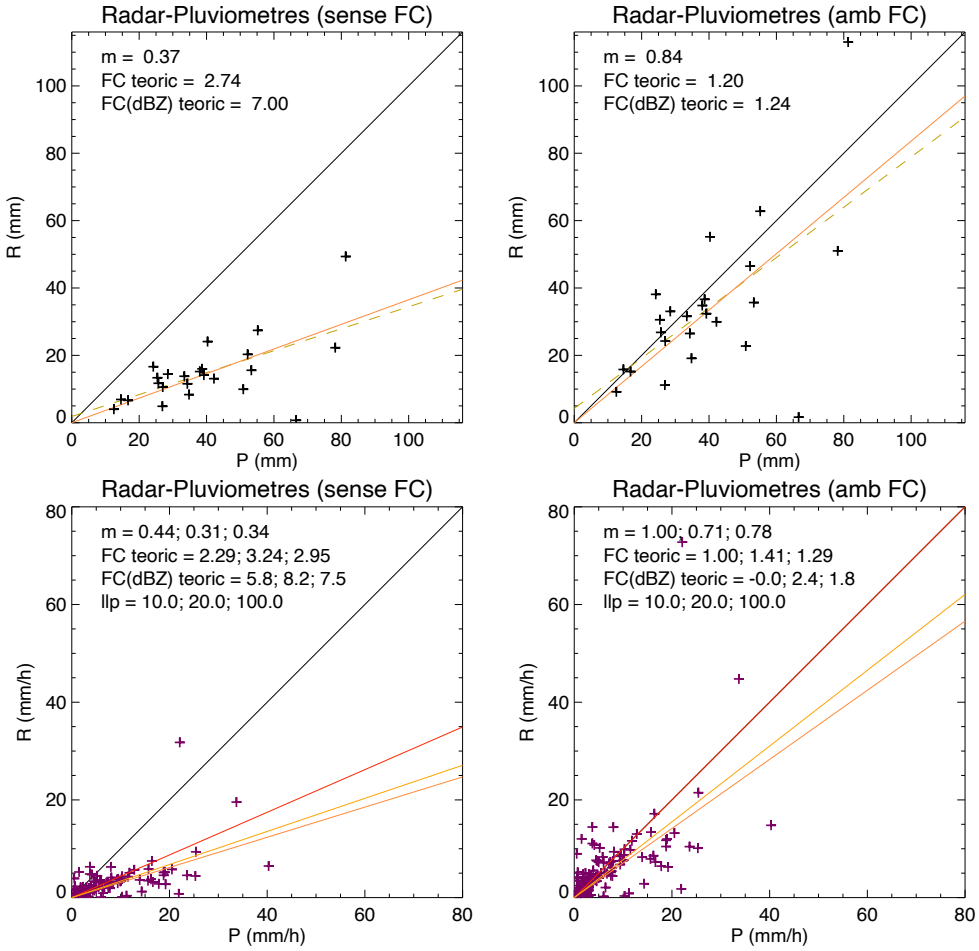


PBE: 20250723 – 20250724

lim= 200. fc aplicat= 2.29

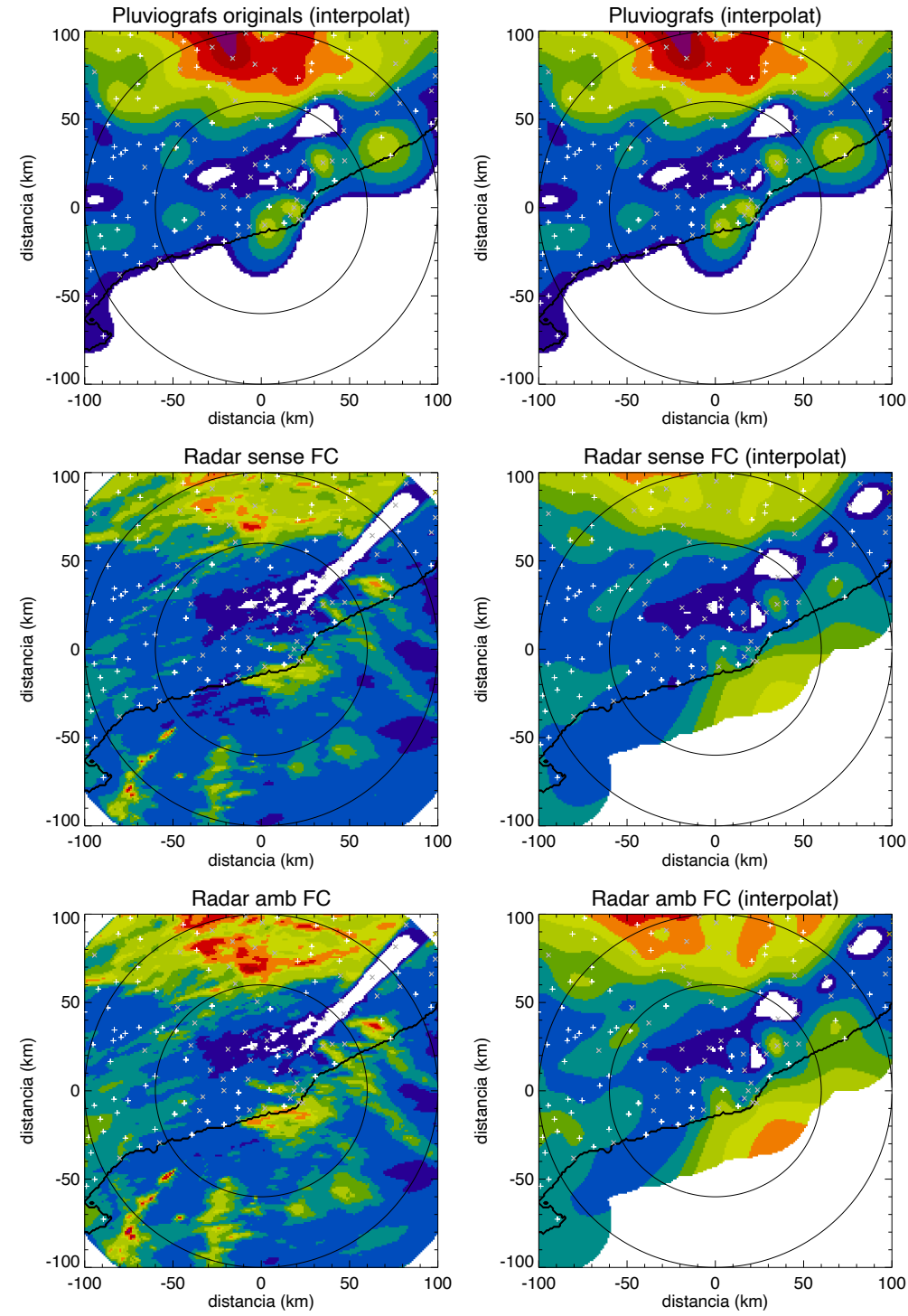


PBE: 20250723 – 20250724

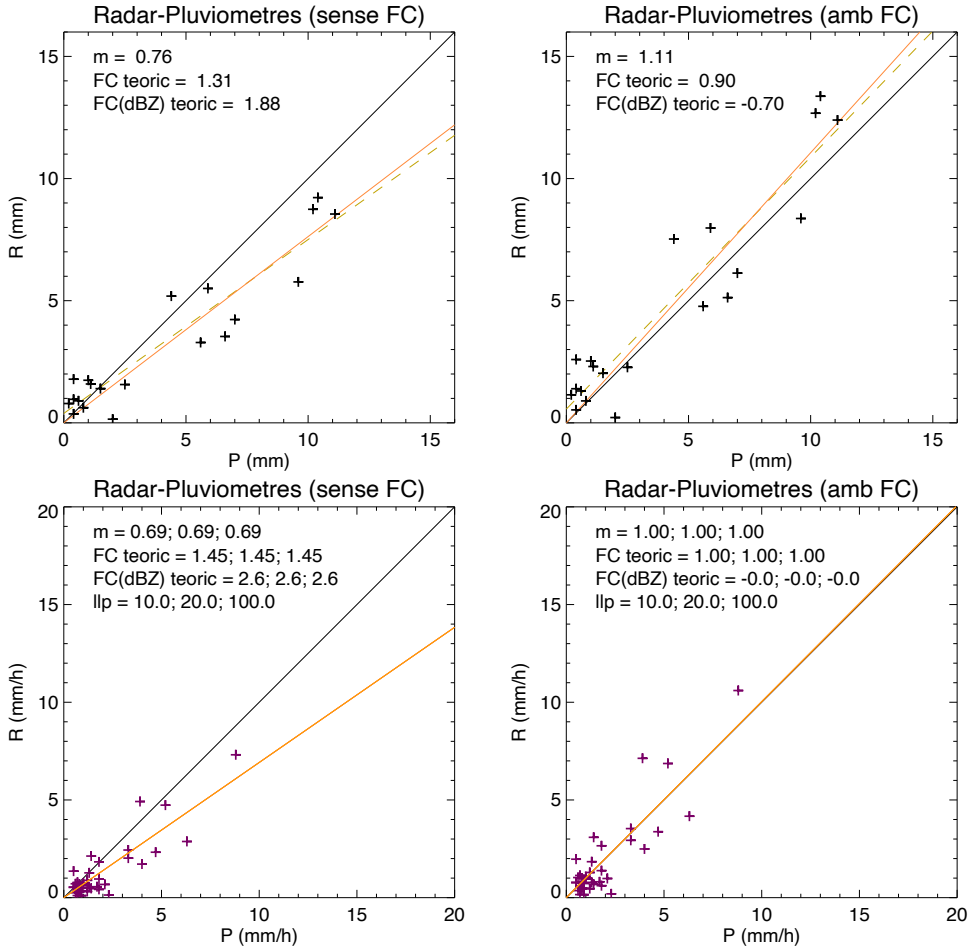


PBE: 20250818 – 20250820

lim= 200. fc aplicat= 1.45

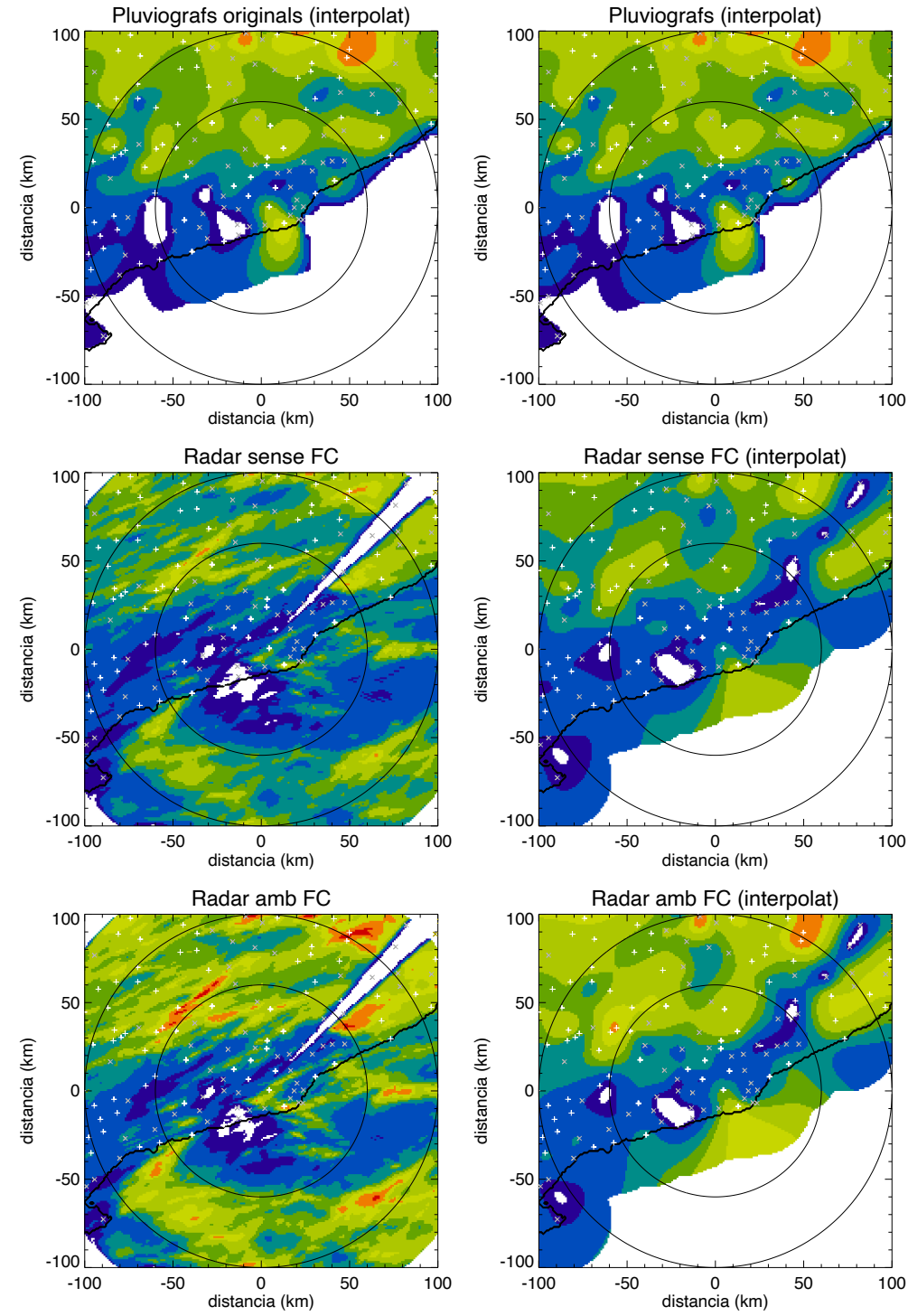


PBE: 20250818 – 20250820

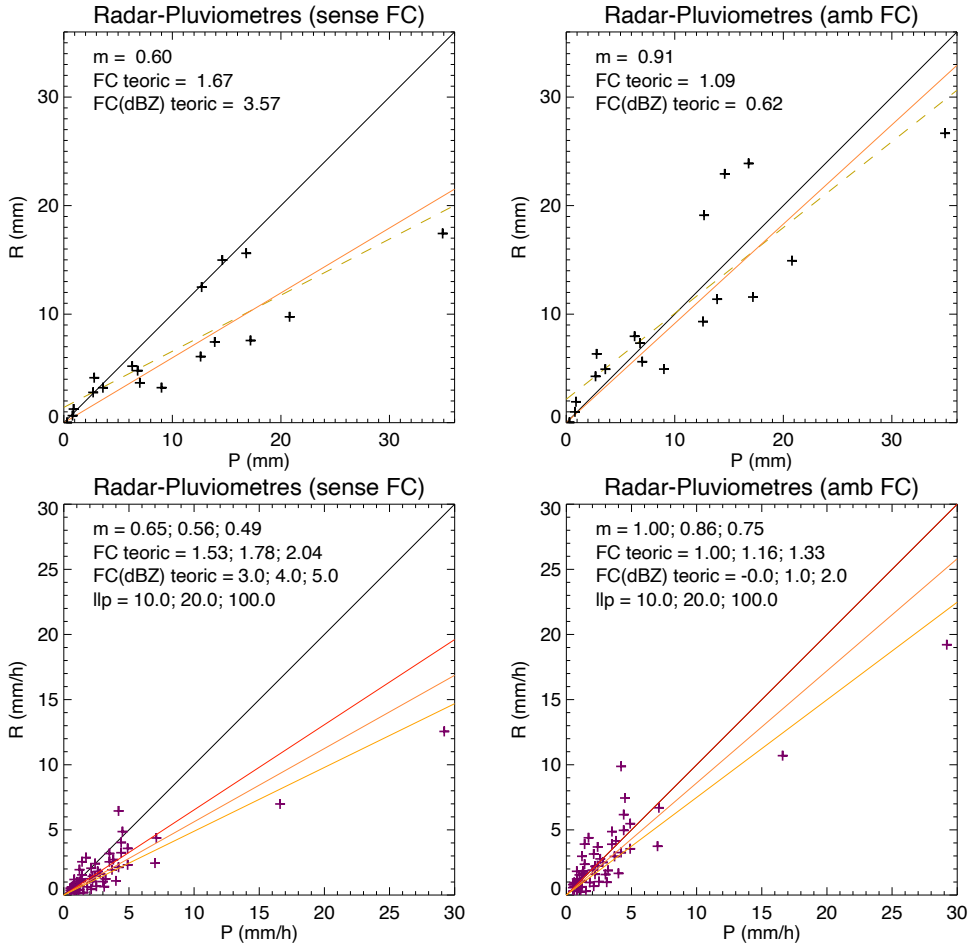


PBE: 20250827 – 20250829

lim= 200. fc aplicat= 1.53

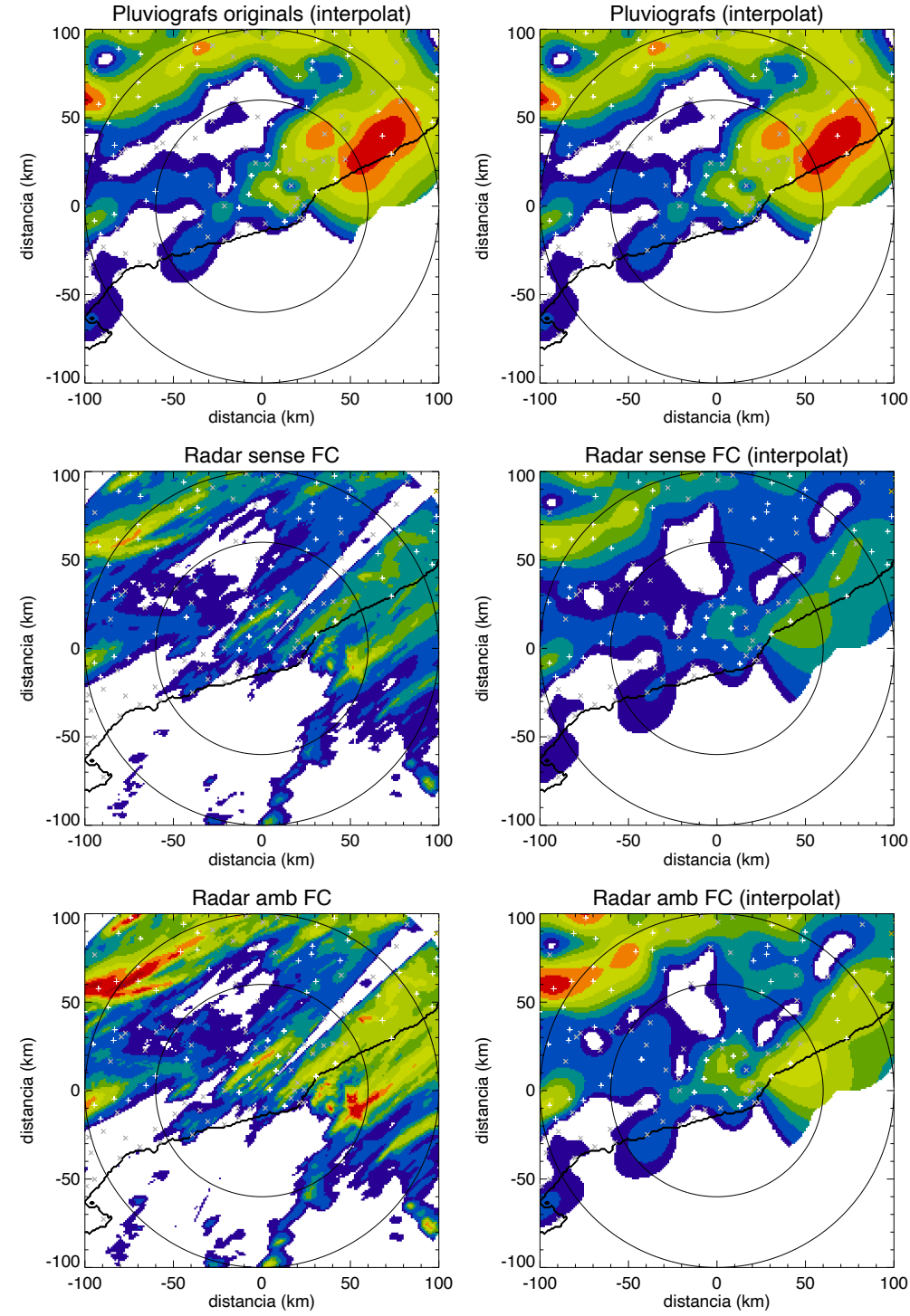


PBE: 20250827 – 20250829

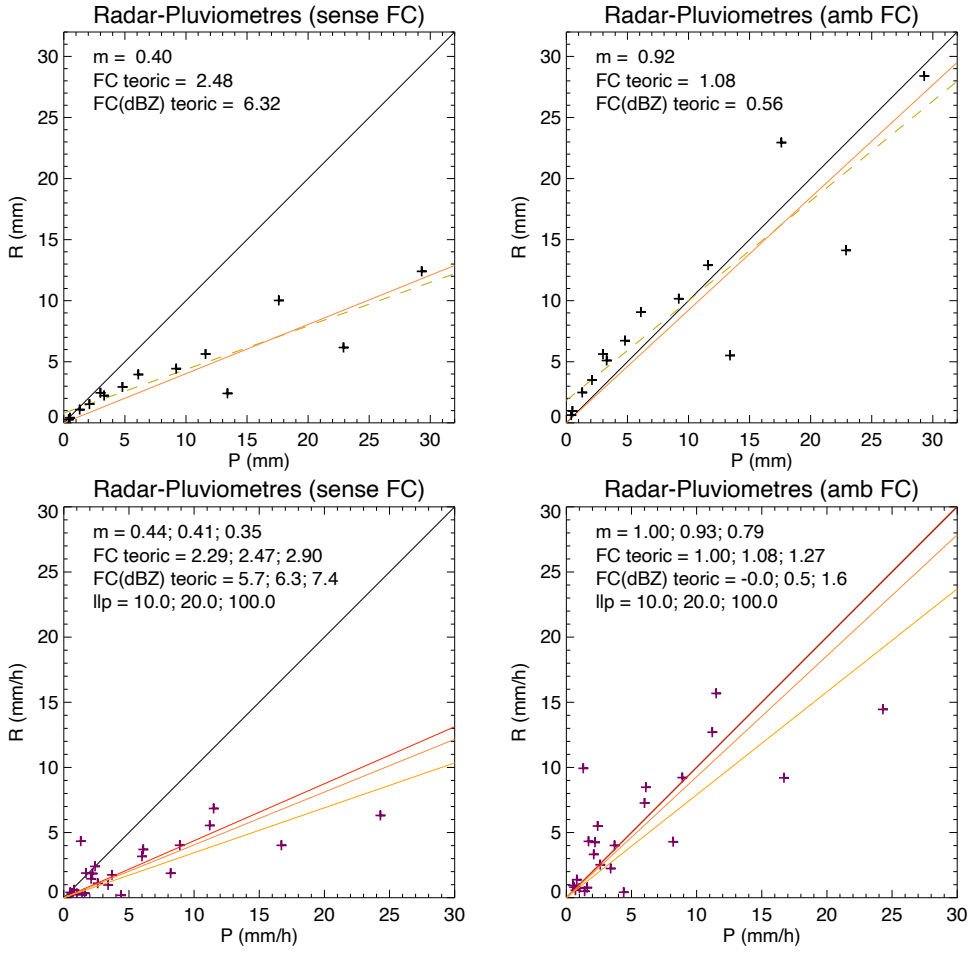


PBE: 20250831 – 20250901

lim= 200. fc aplicat= 2.29

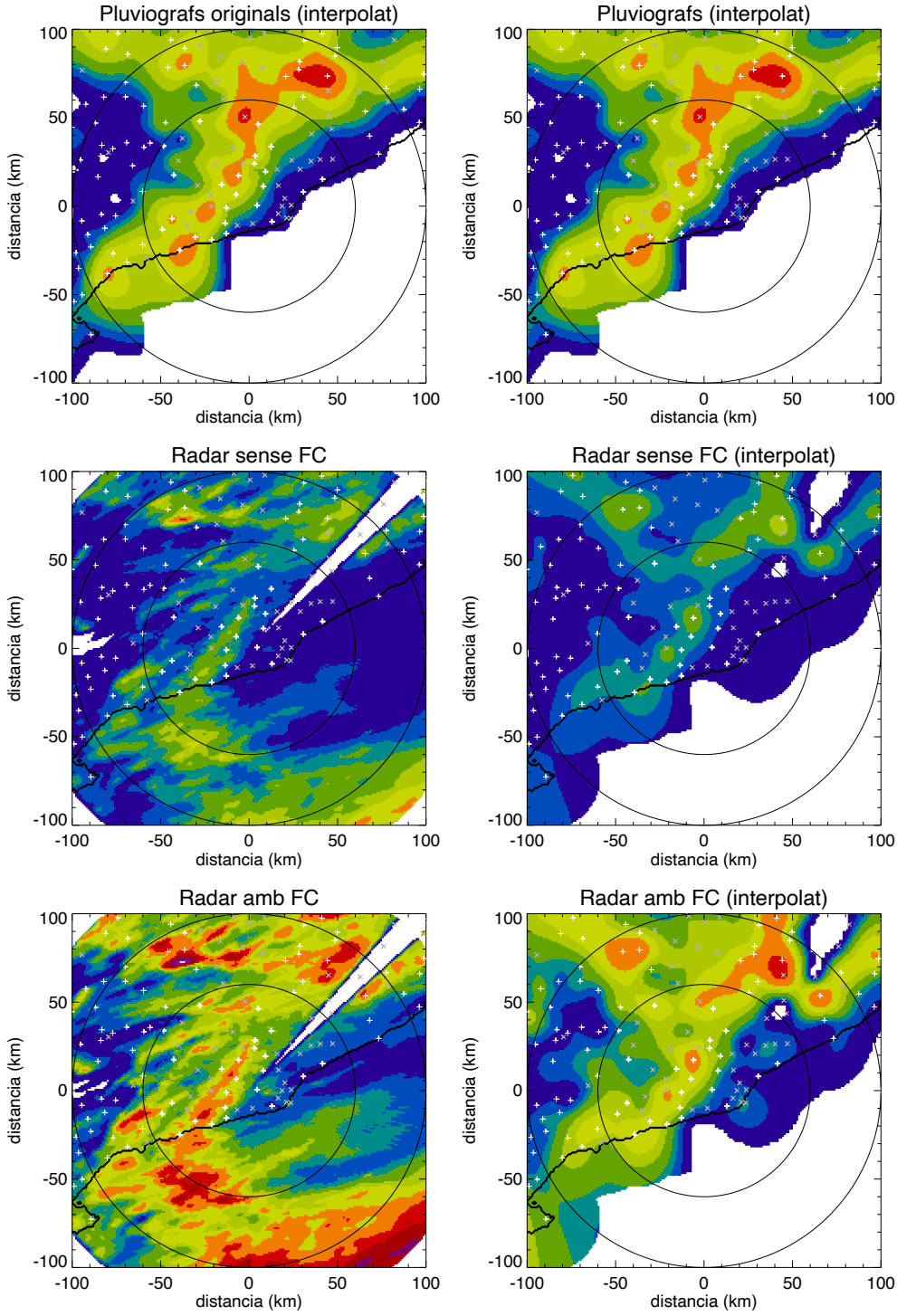


PBE: 20250831 – 20250901

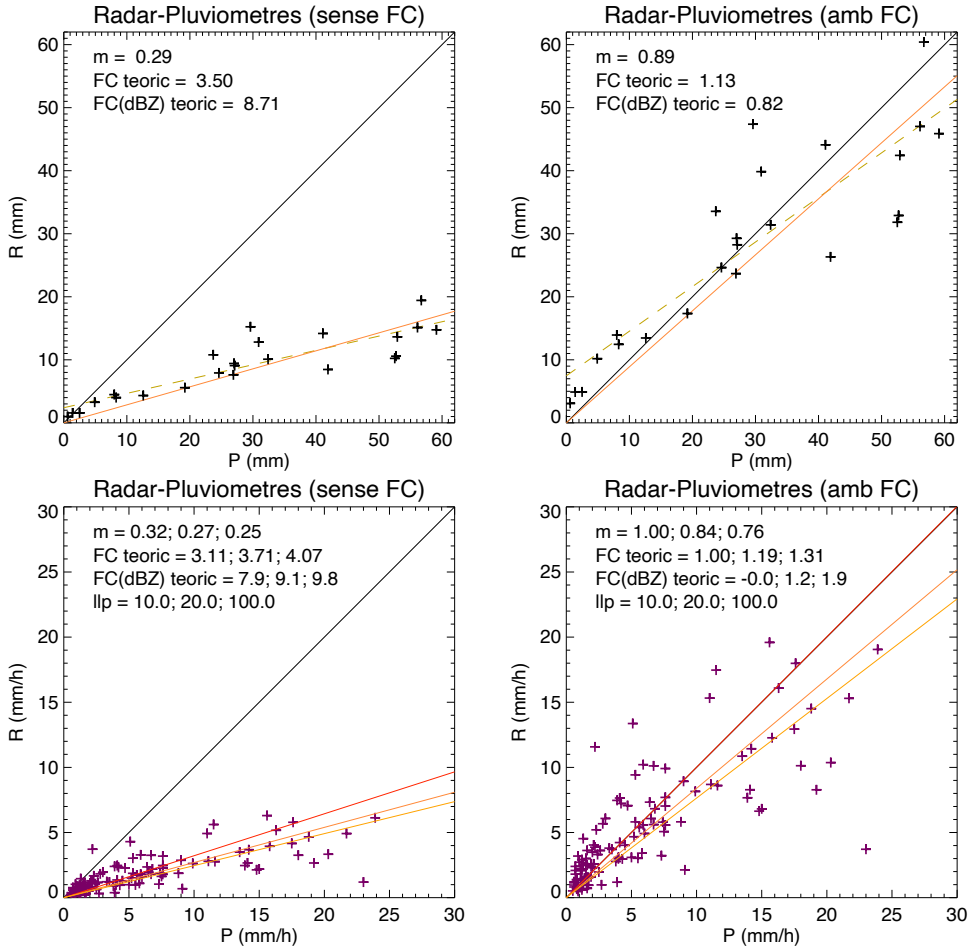


PBE: 20250908 – 20250909

lim= 250. fc aplicat= 3.11

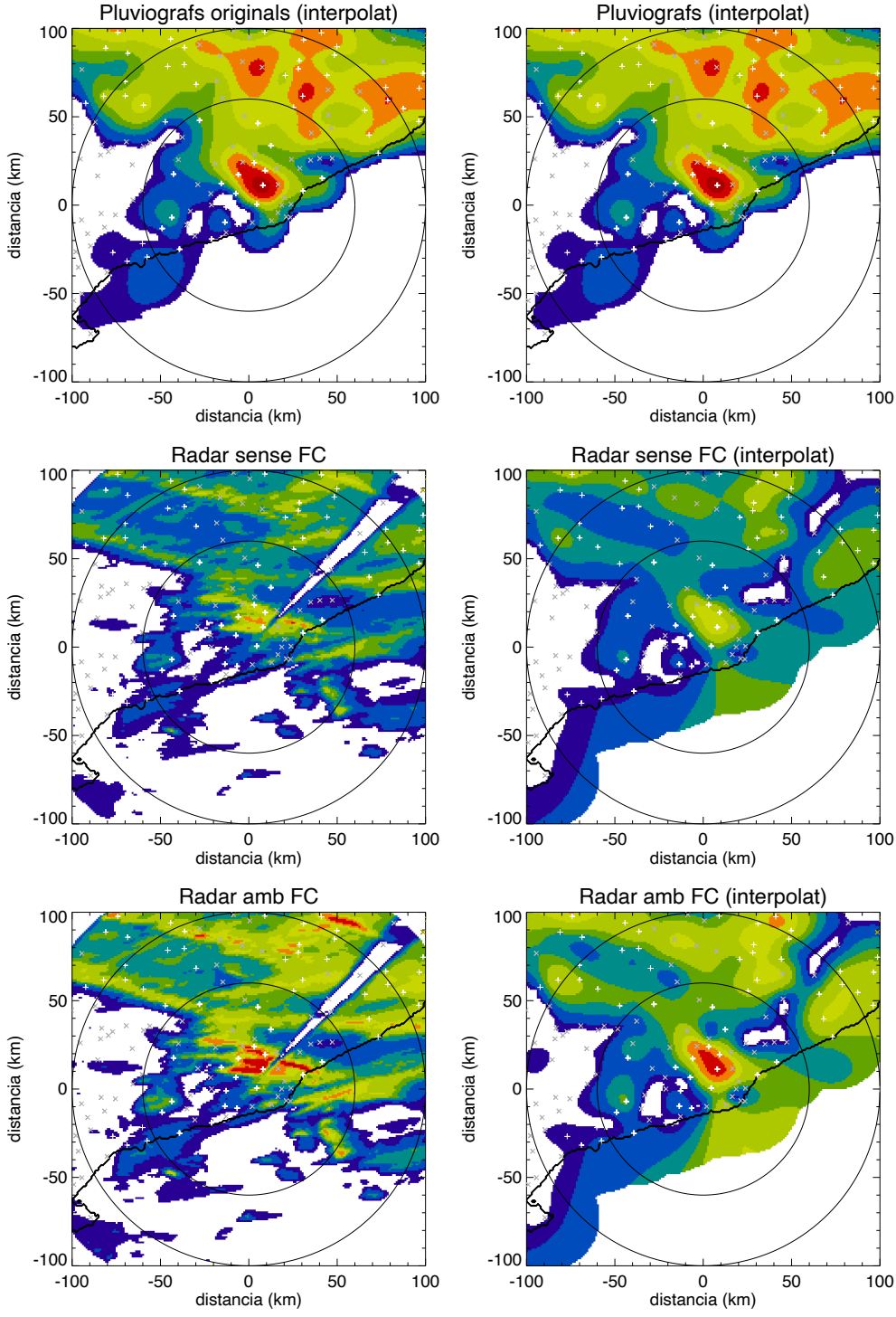


PBE: 20250908 – 20250909

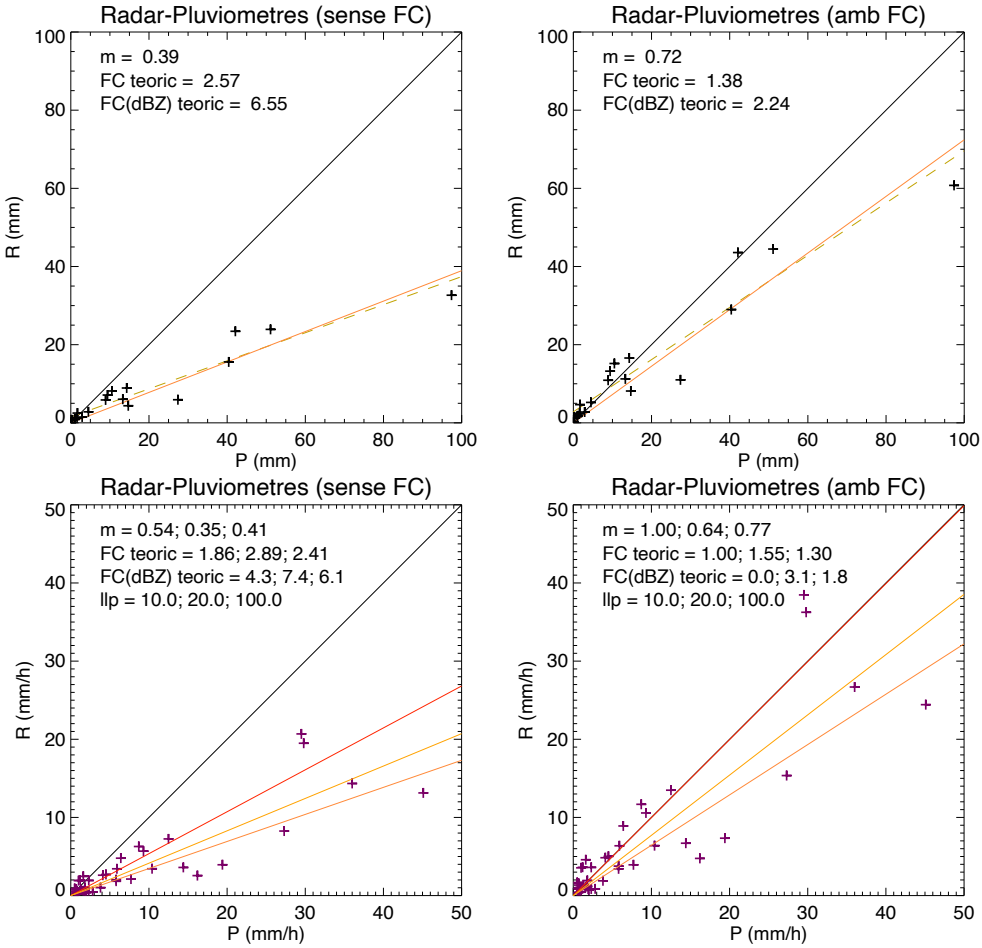


PBE: 20250912 – 20250913

lim= 200. fc aplicat= 1.86

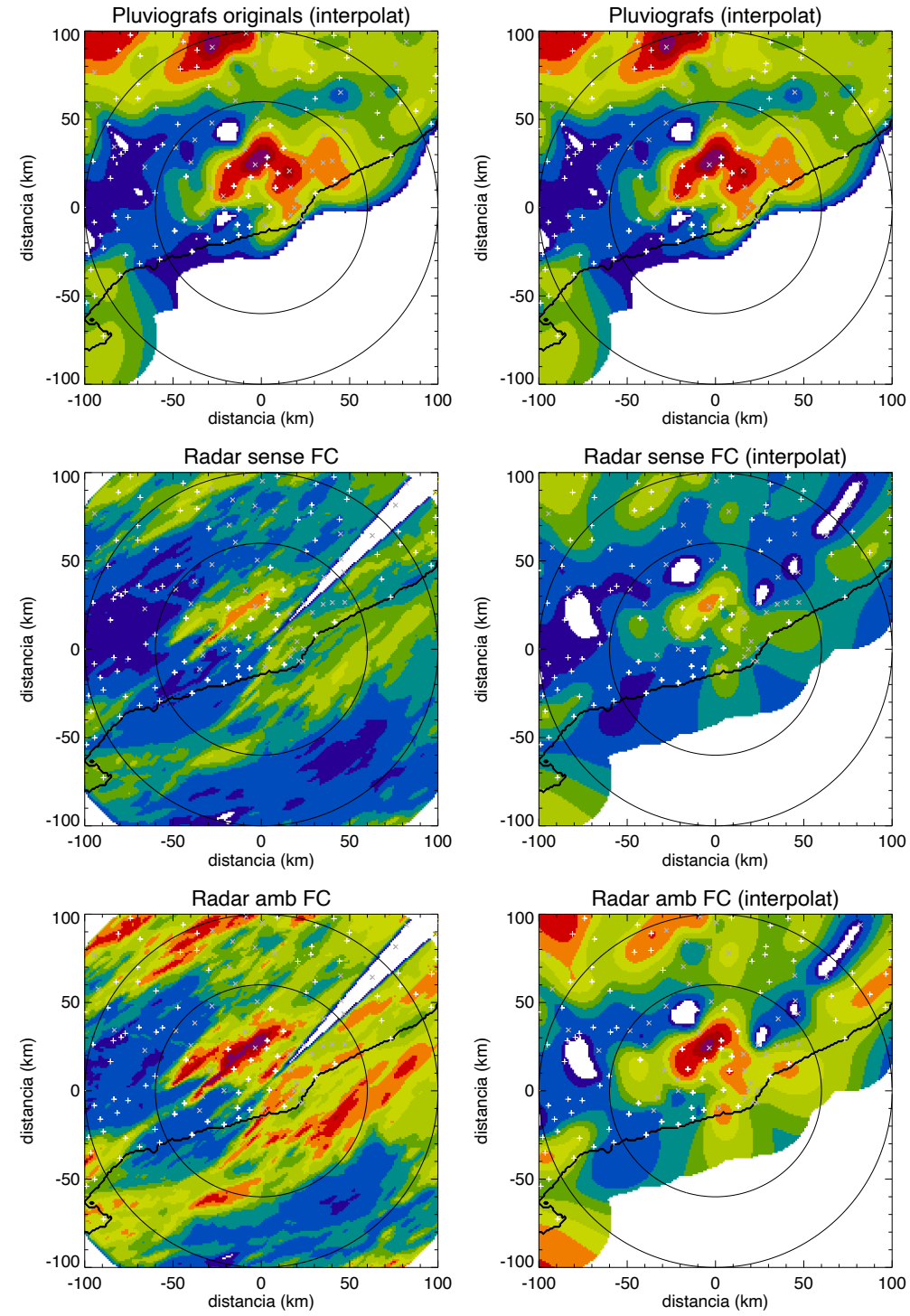


PBE: 20250912 – 20250913

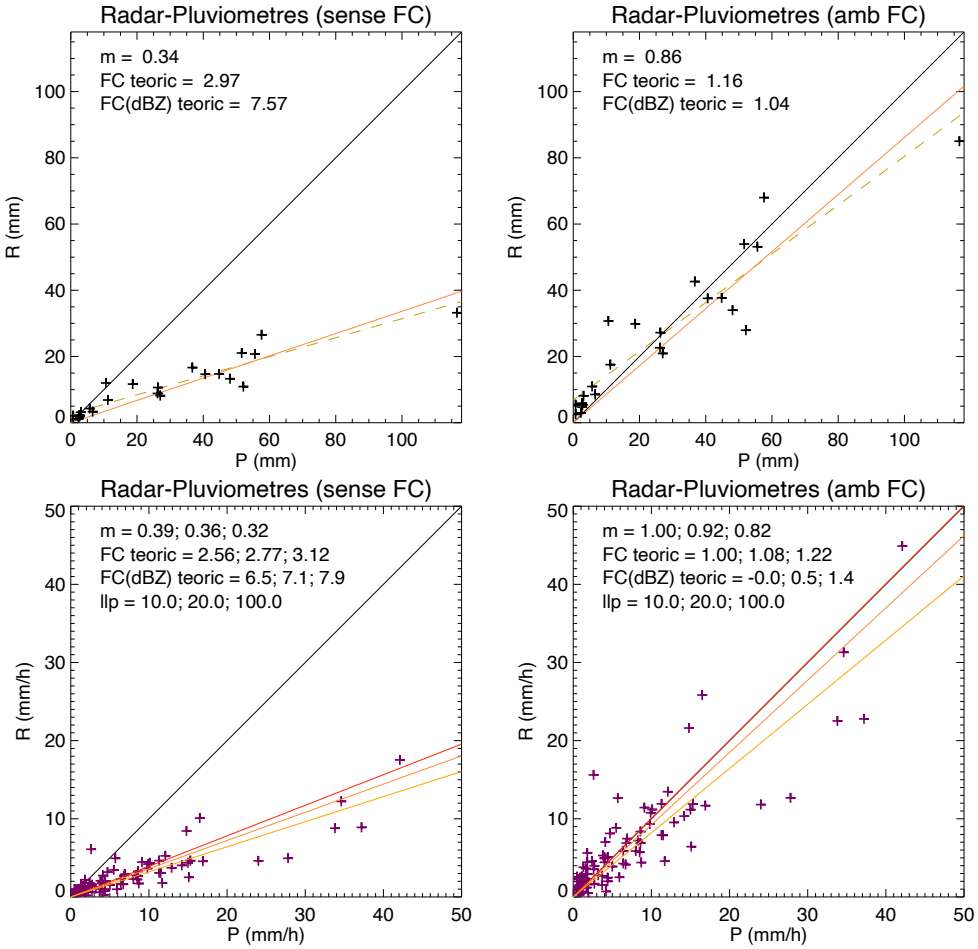


PBE: 20250921 – 20250921

lim= 200. fc aplicat= 2.56

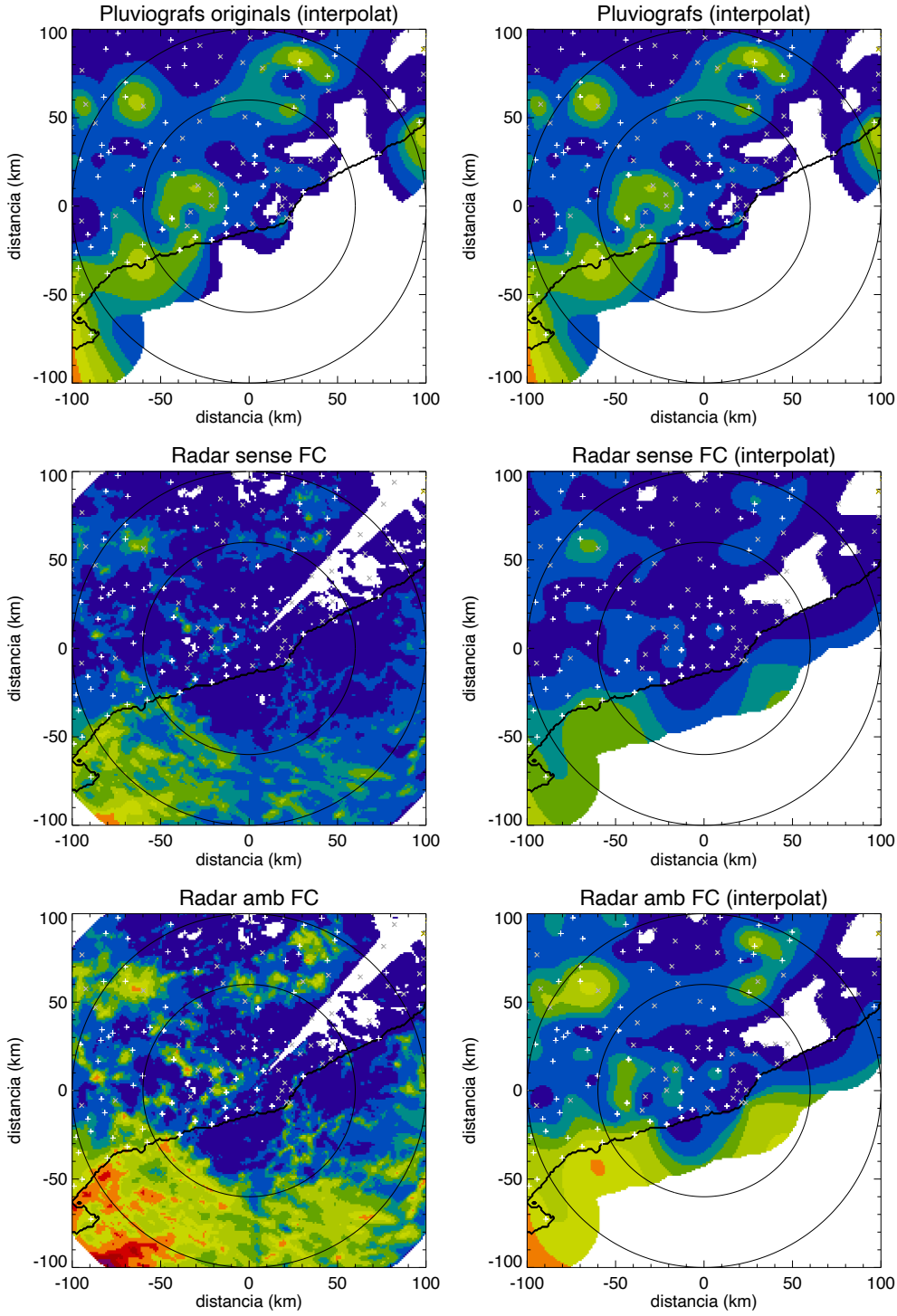


PBE: 20250921 – 20250921

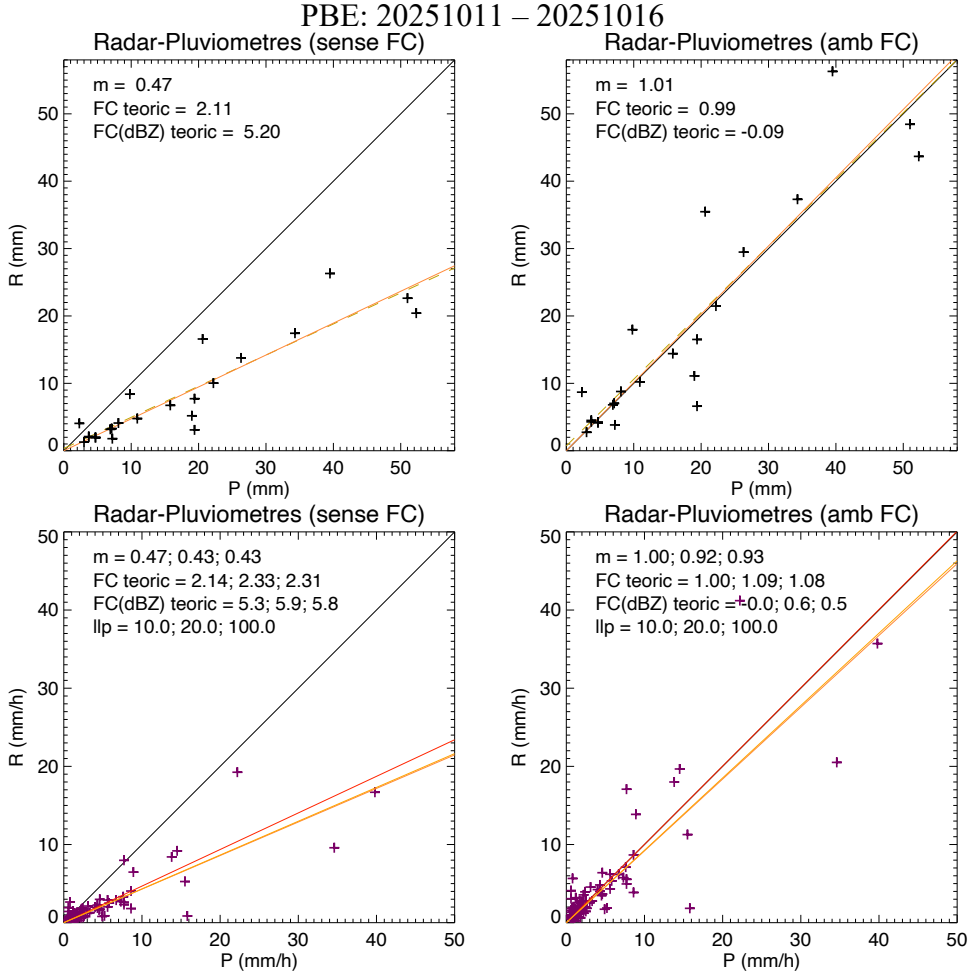


PBE: 20251011 – 20251016

lim= 350. fc aplicat= 2.14

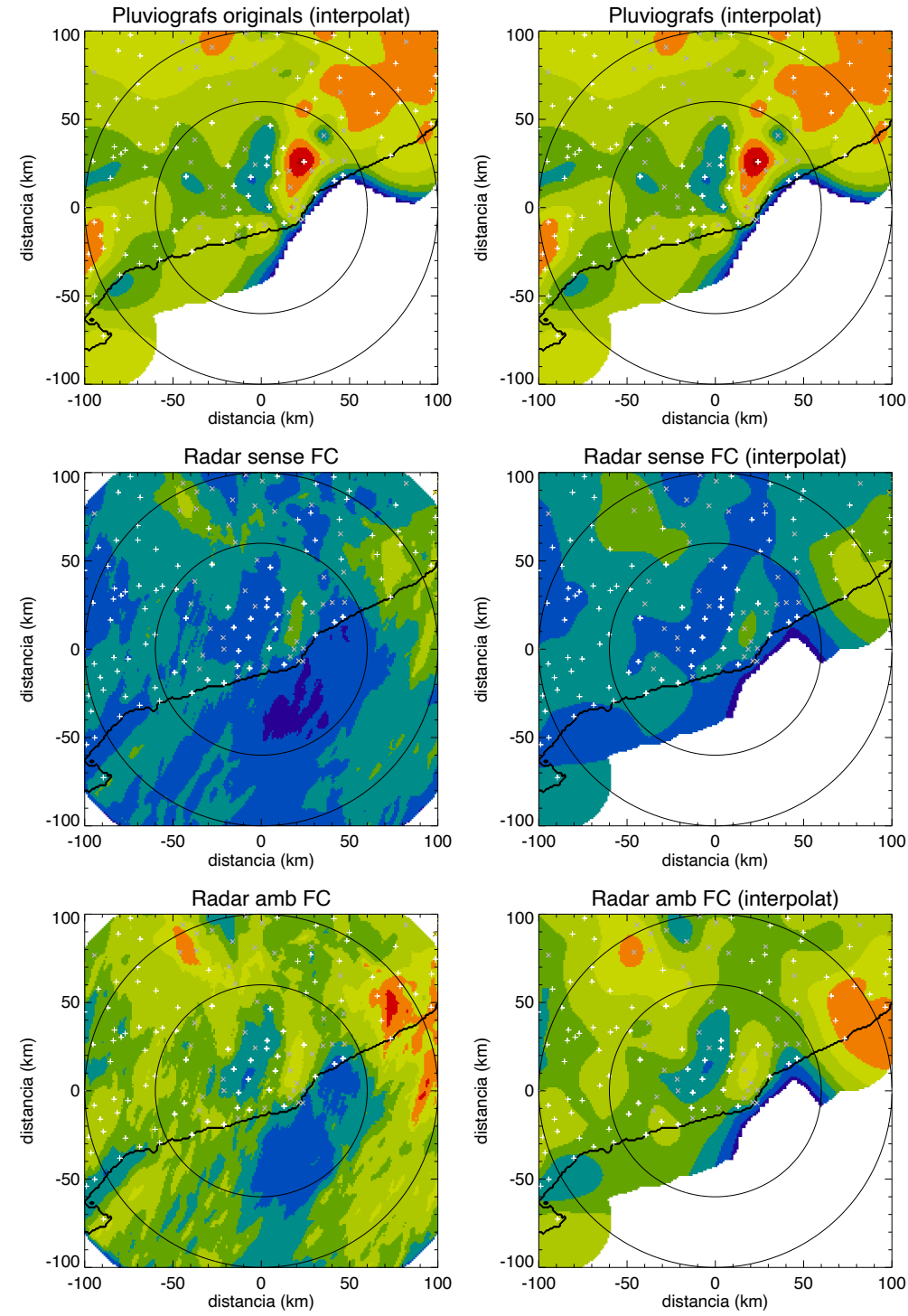


PBE: 20251011 – 20251016

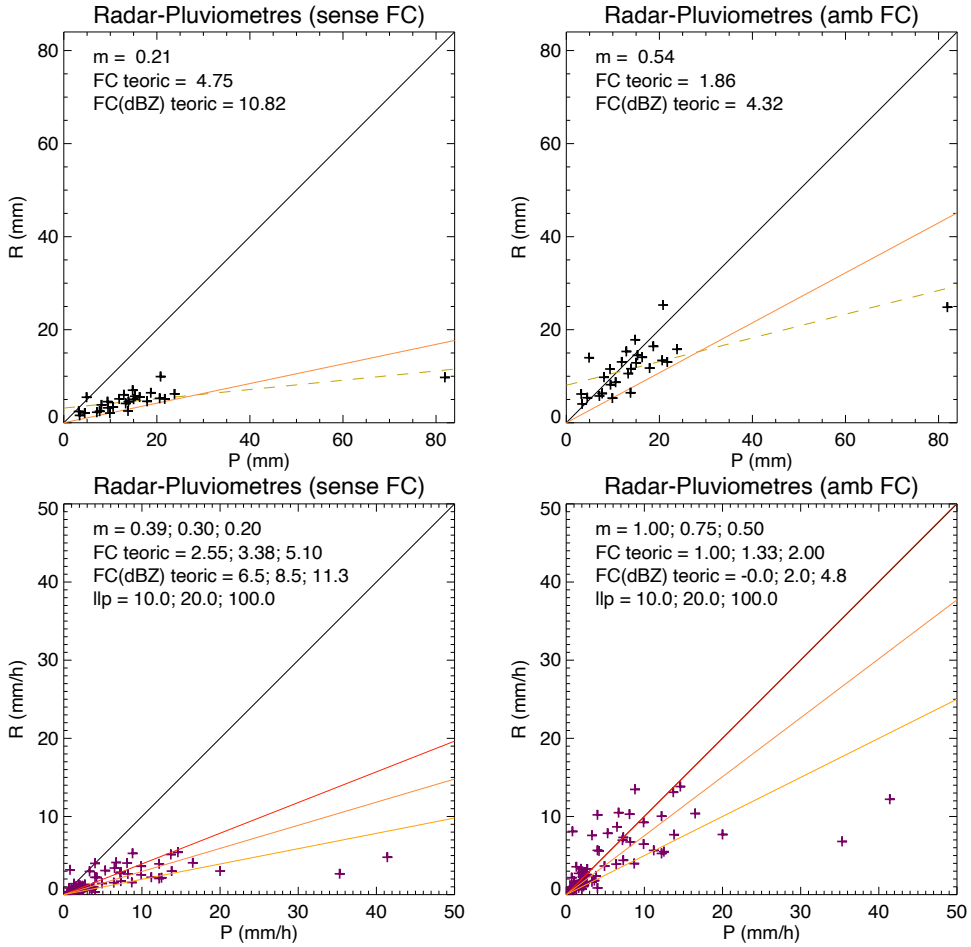


PBE: 20251106 – 20251106

lim= 200. fc aplicat= 2.55

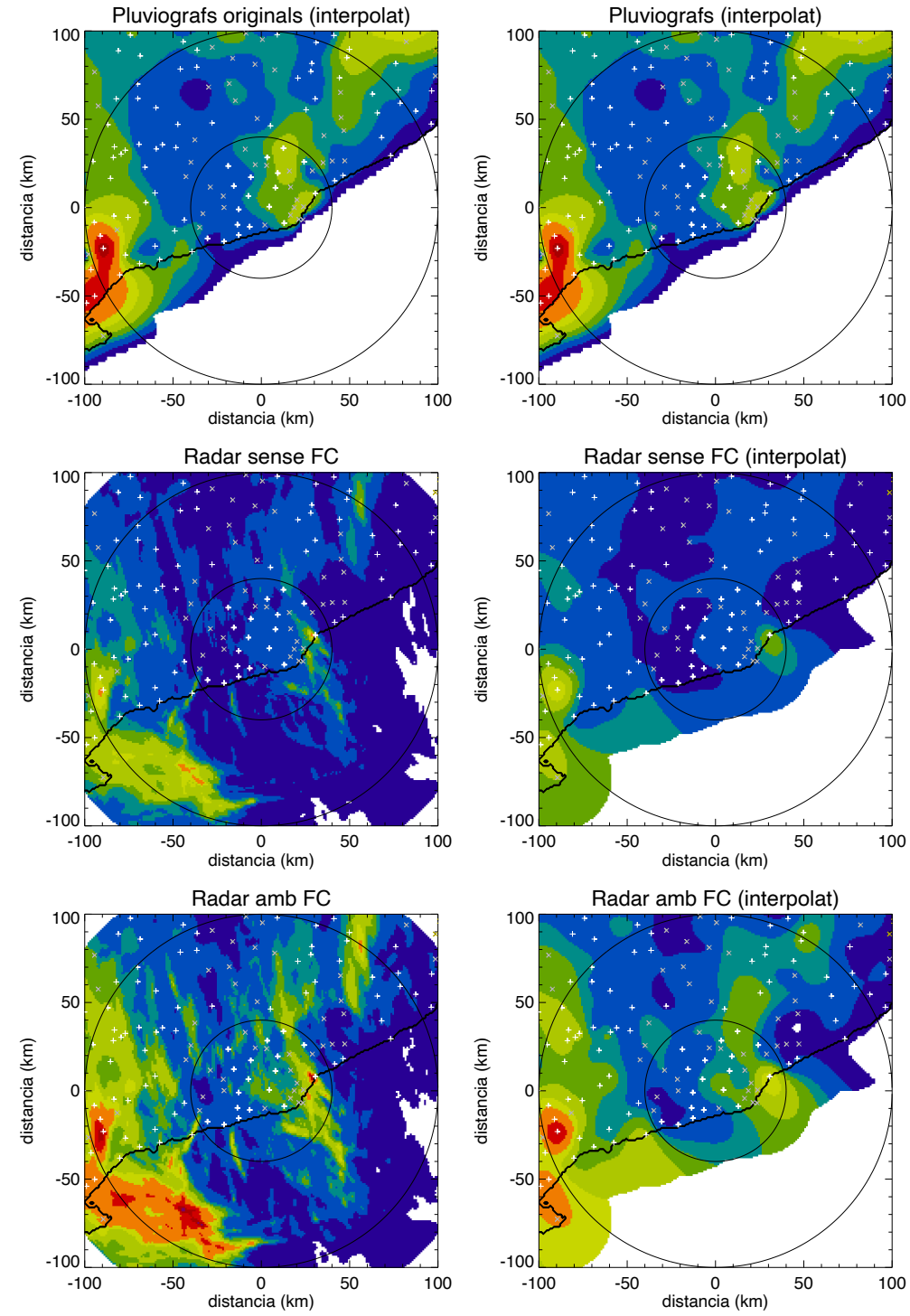


PBE: 20251106 – 20251106

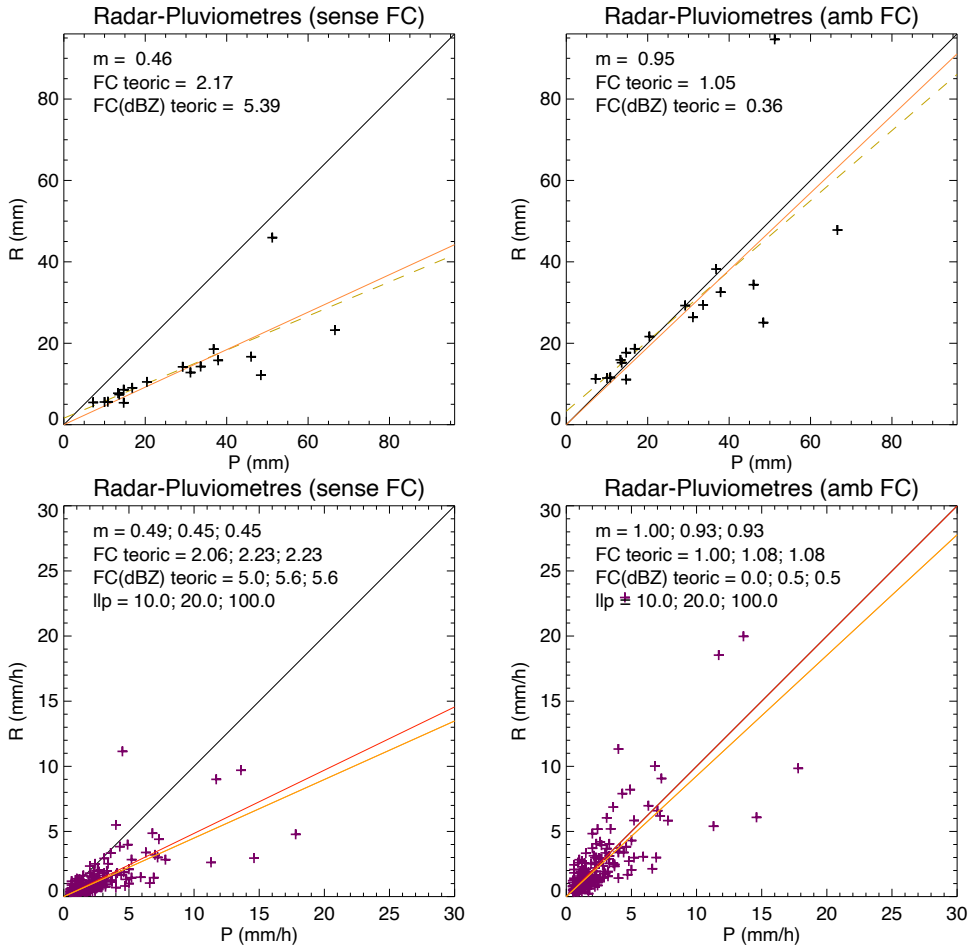


PBE: 20251214 – 20251217

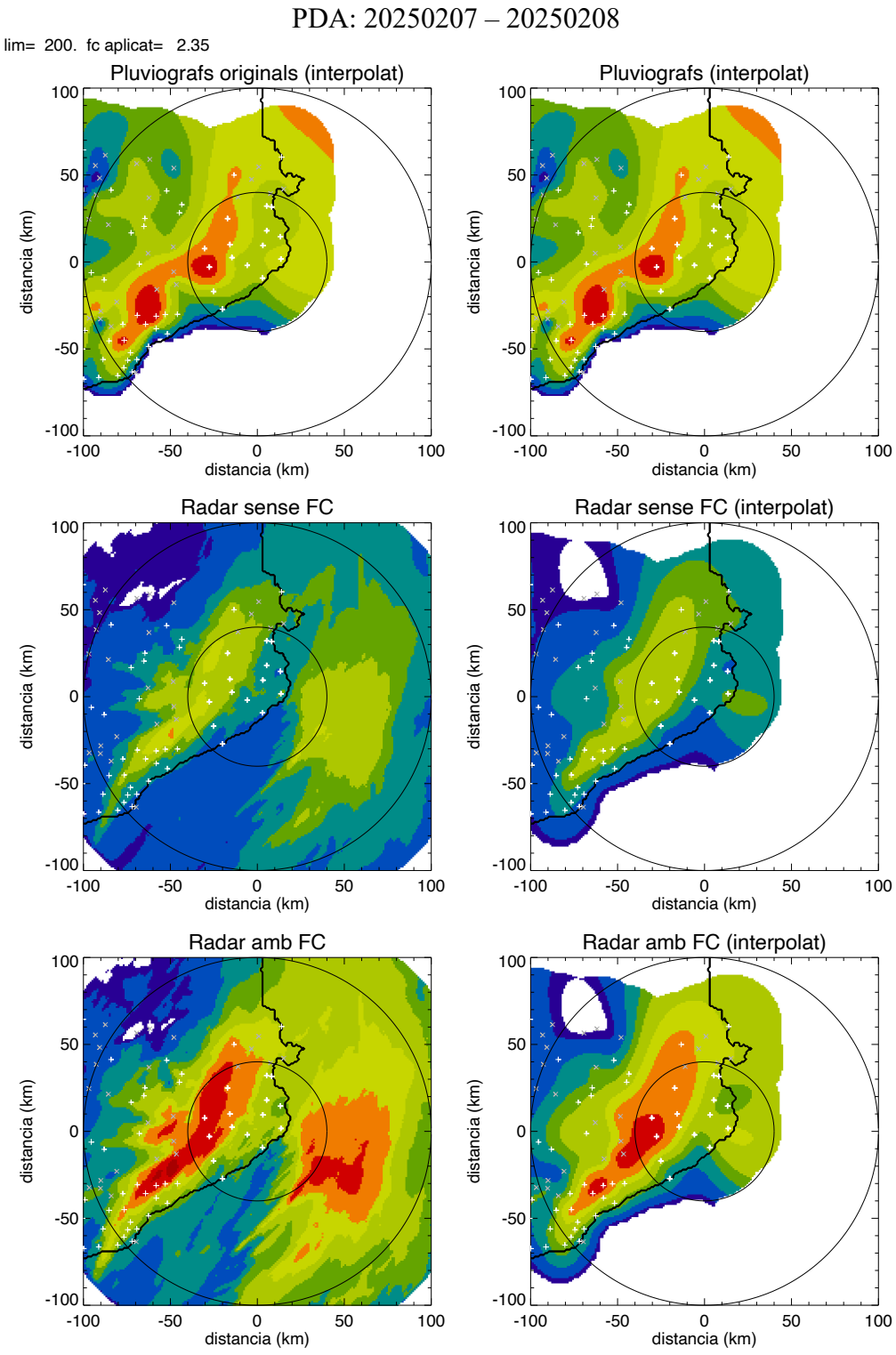
lim= 350. fc aplicat= 2.06



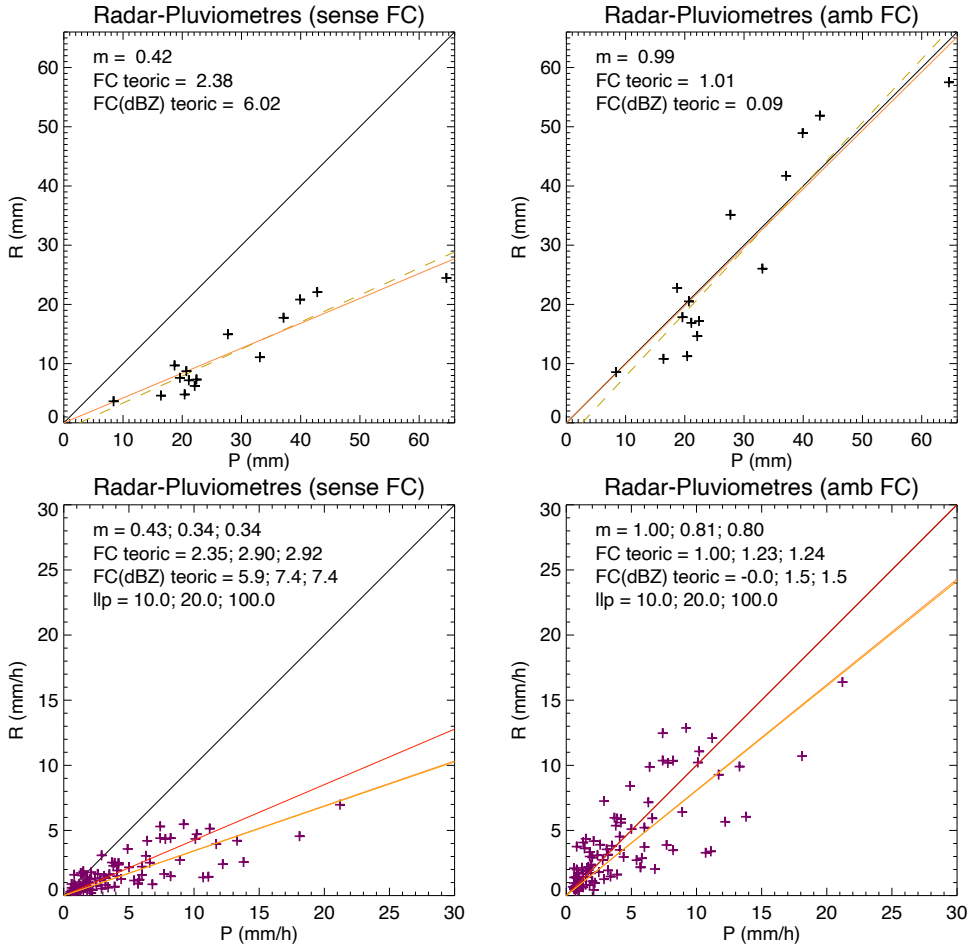
PBE: 20251214 – 20251217



Radar PDA

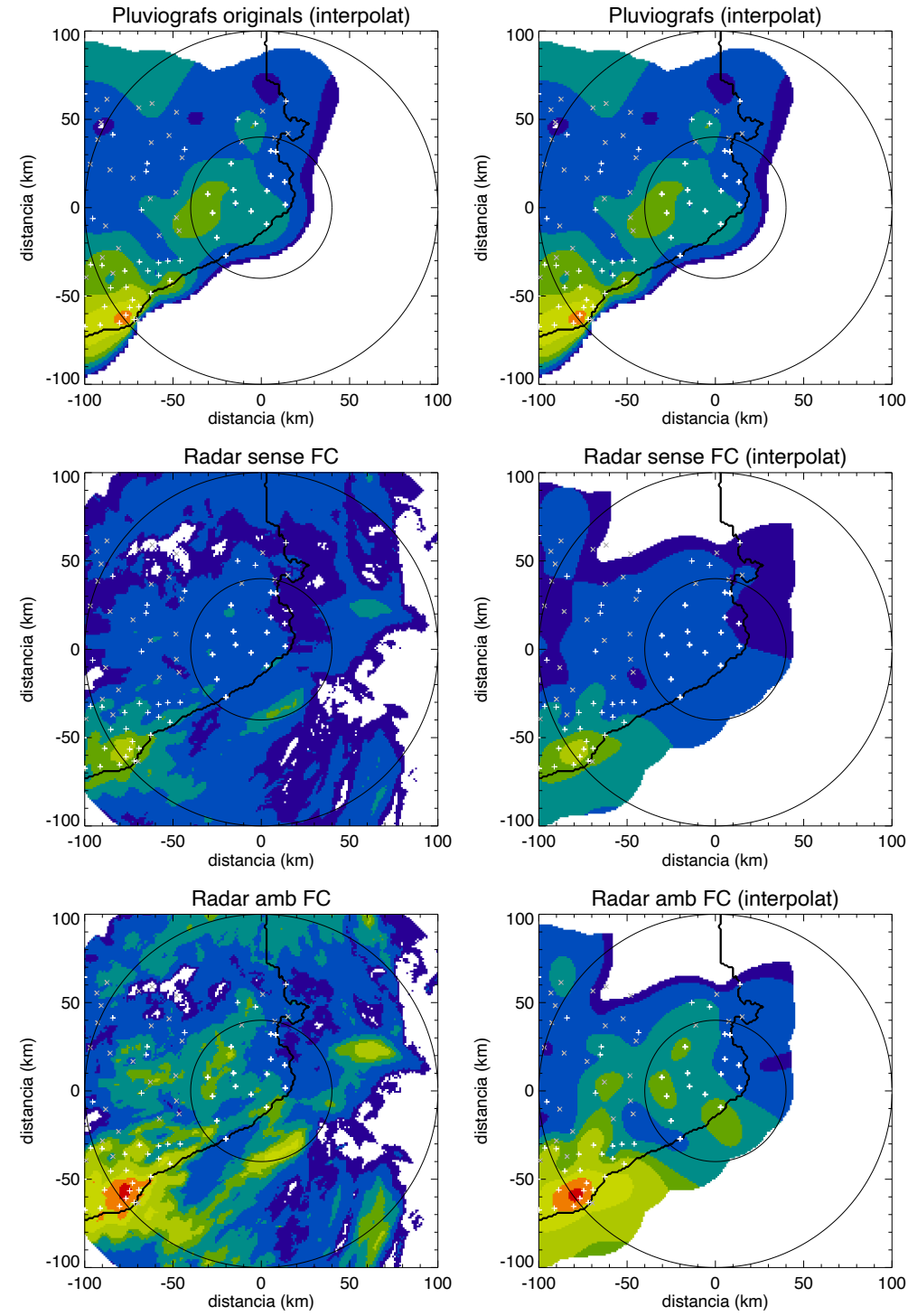

PDA: 20250207 – 20250208
lim= 200. fc aplicat= 2.35
Pluviografs originals (interpolat)
Pluviografs (interpolat)
Radar sense FC
Radar sense FC (interpolat)
Radar amb FC
Radar amb FC (interpolat)
distancia (km)
100
50
0
-50
-100

PDA: 20250207 – 20250208

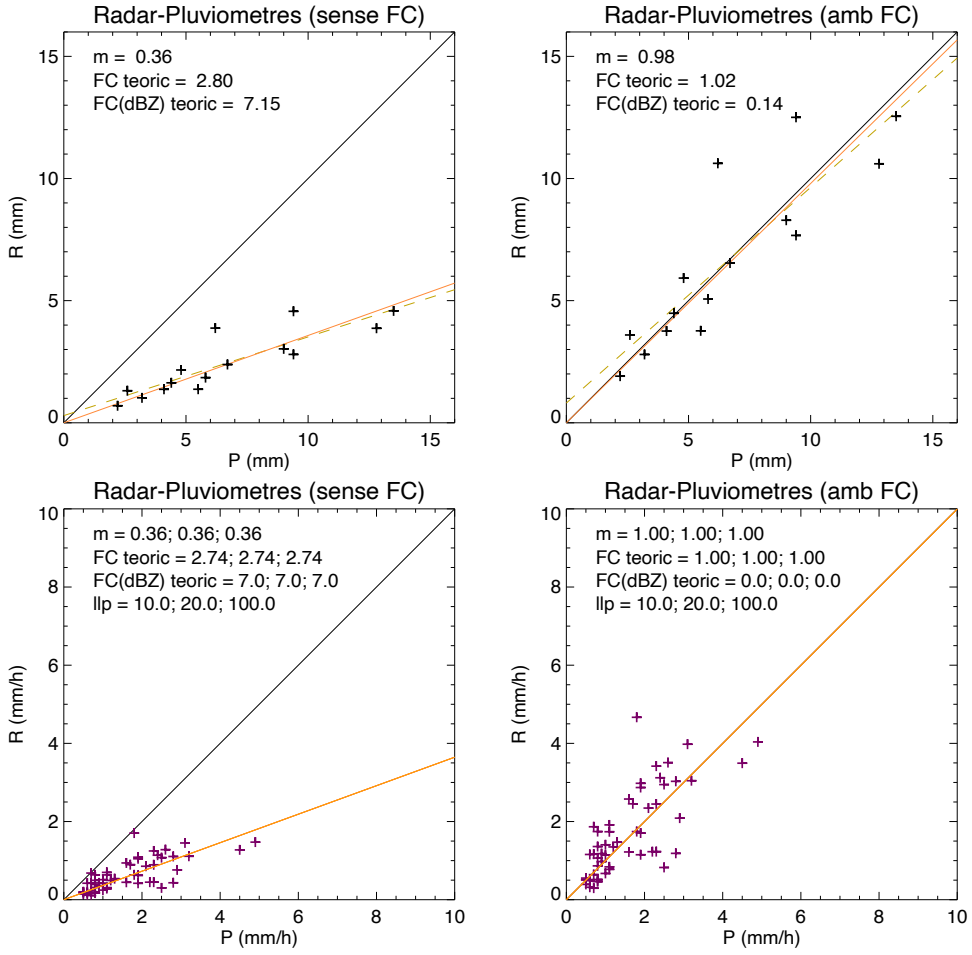


PDA: 20250212 – 20250212

lim= 200. fc aplicat= 2.74

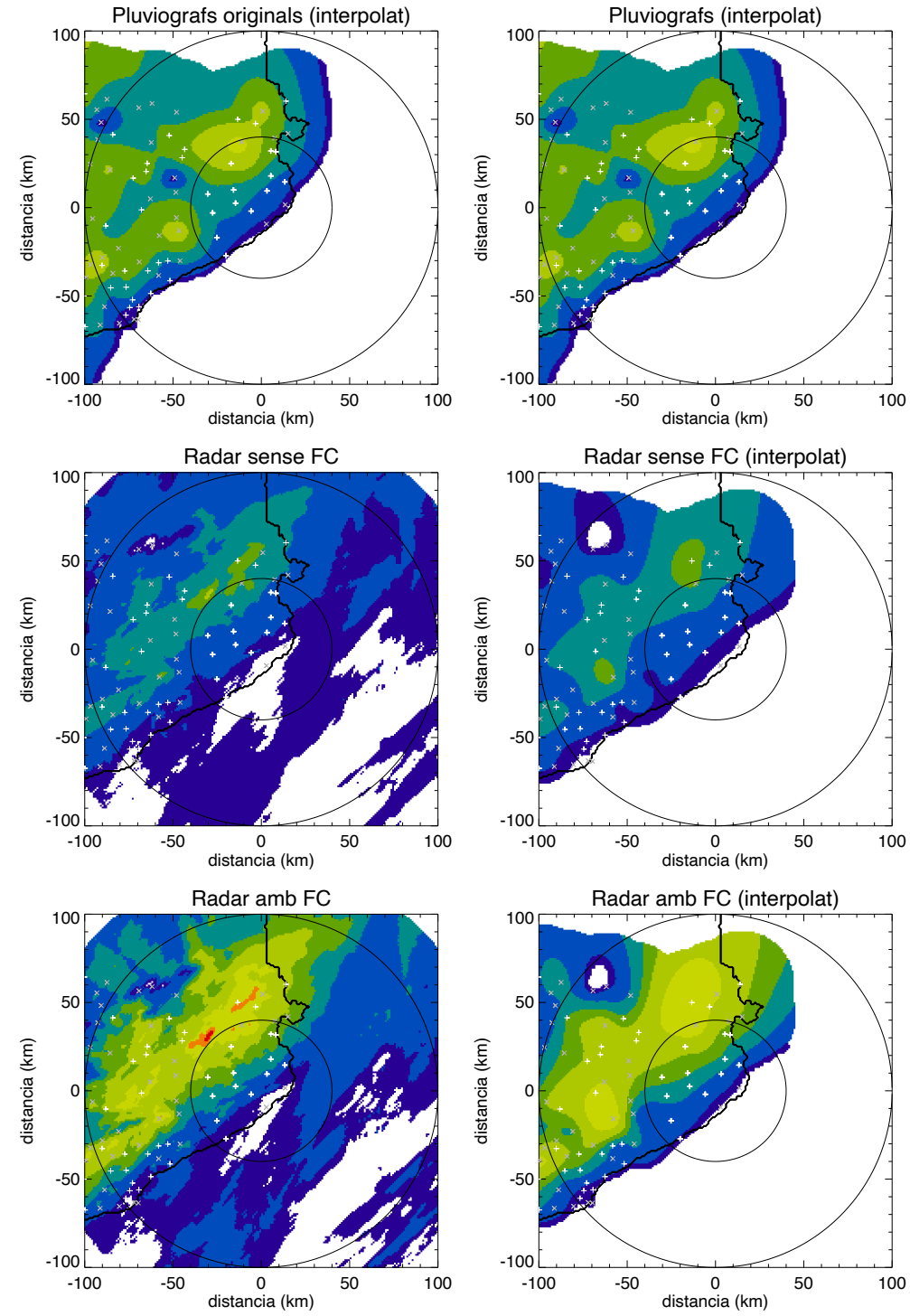


PDA: 20250212 – 20250212

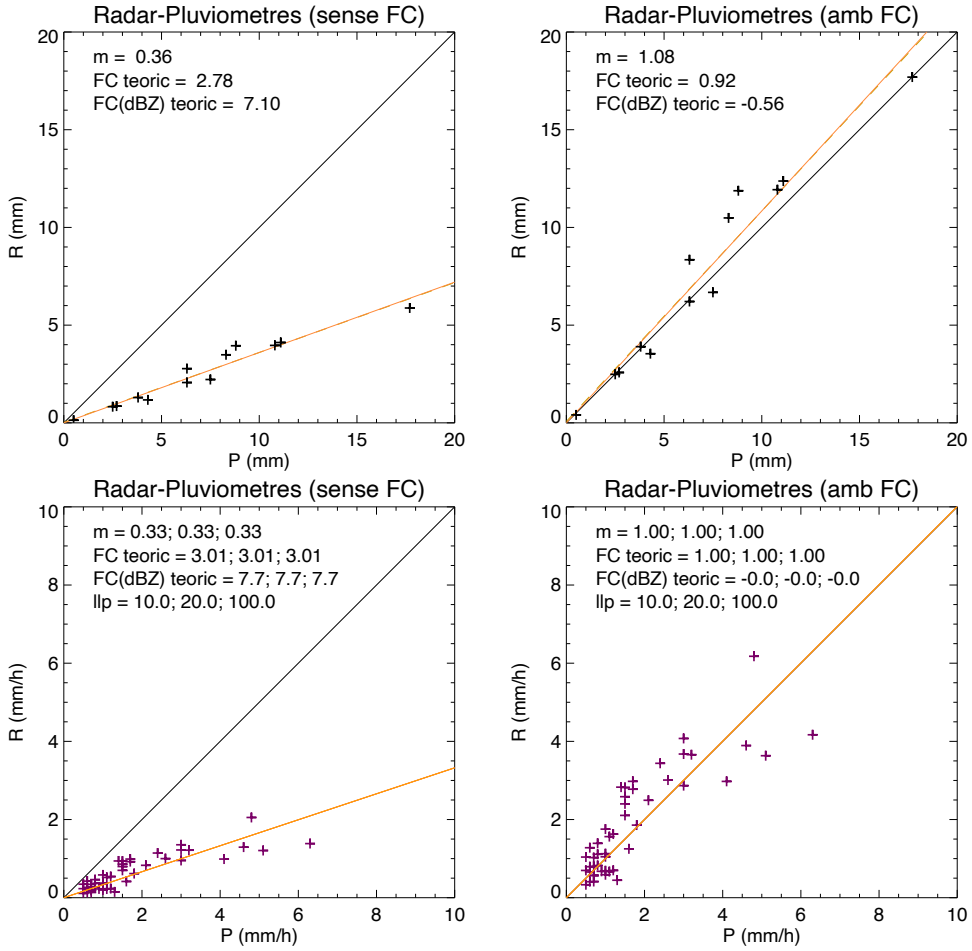


PDA: 20250222 – 20250222

lim= 150. fc aplicat= 3.01

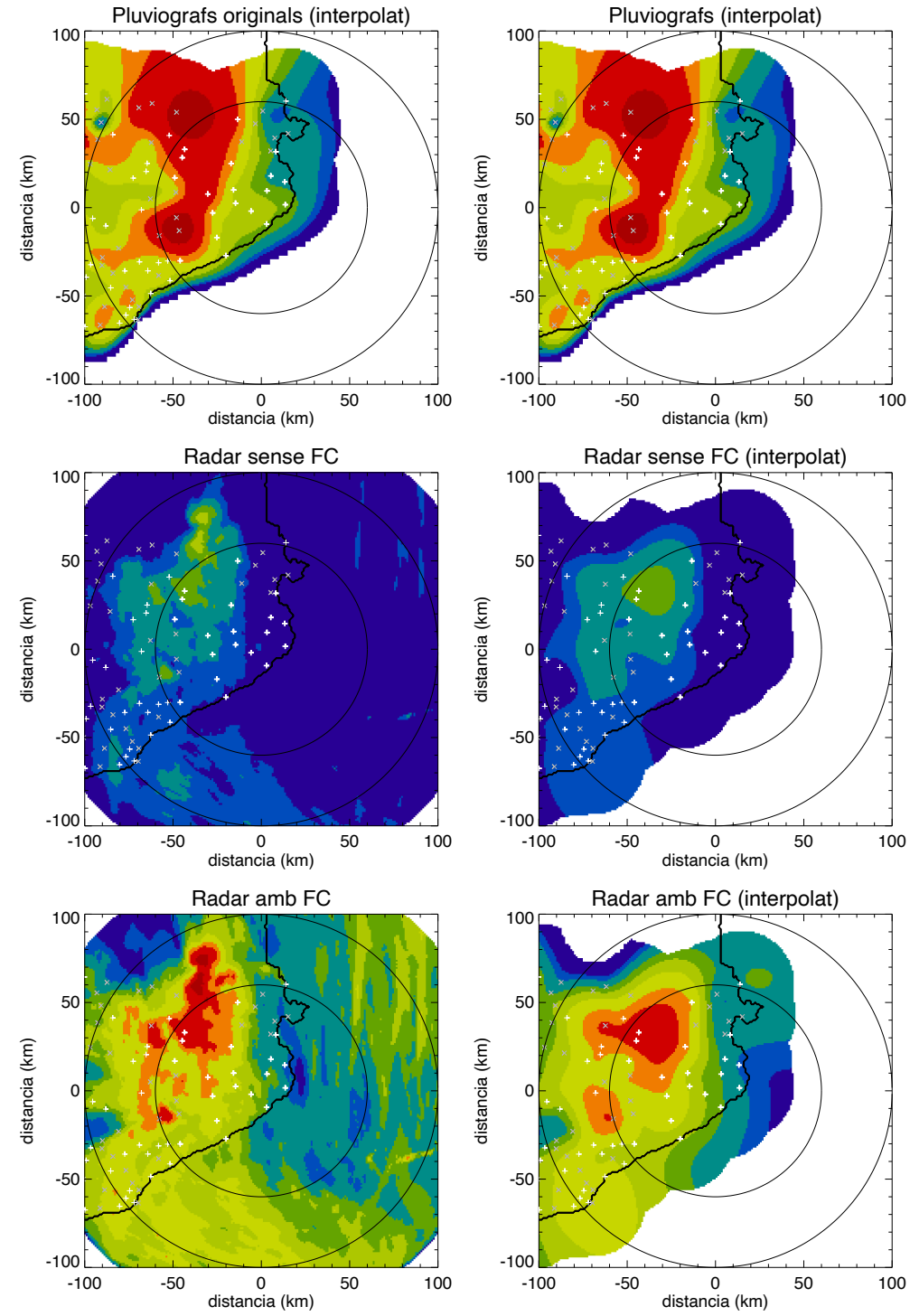


PDA: 20250222 – 20250222

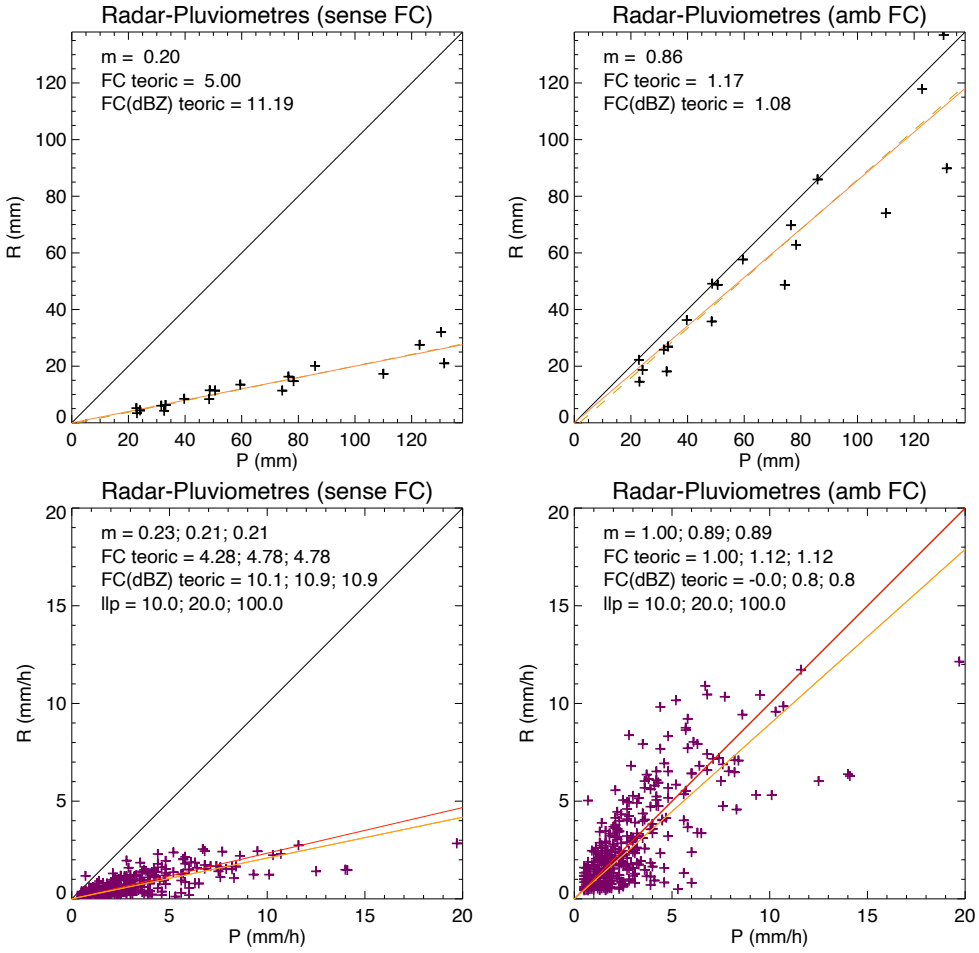


PDA: 20250306 – 20250309

lim= 300. fc aplicat= 4.28

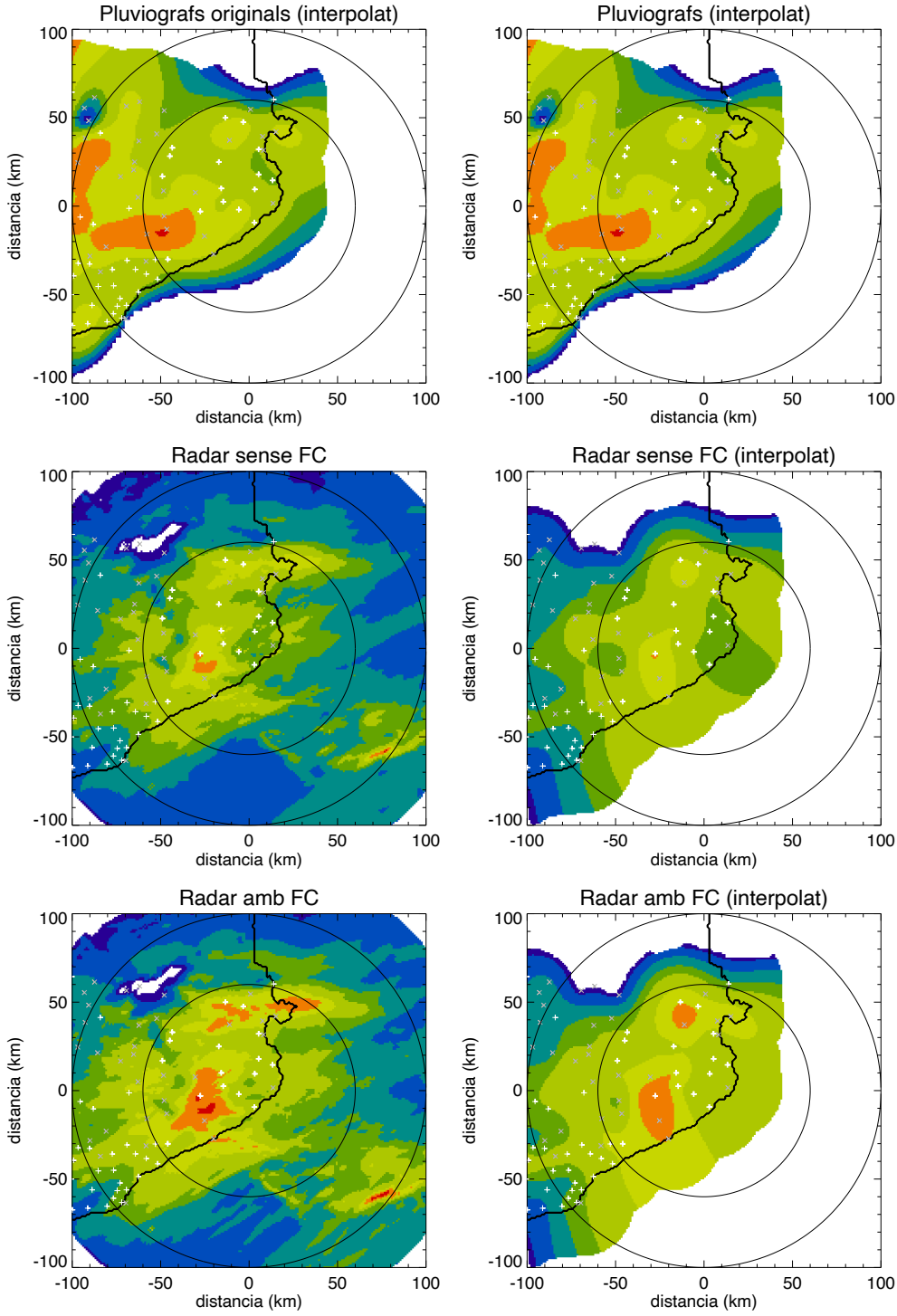


PDA: 20250306 – 20250309

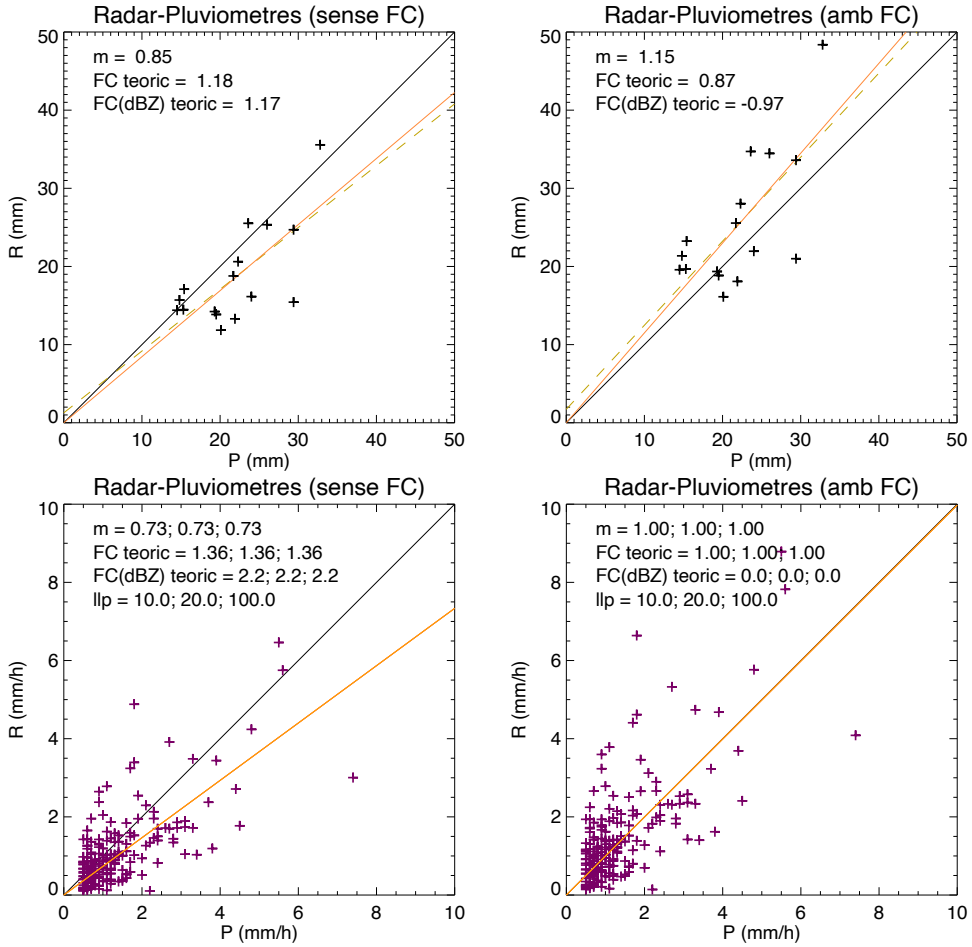


PDA: 20250311 – 20250314

lim= 200. fc aplicat= 1.36

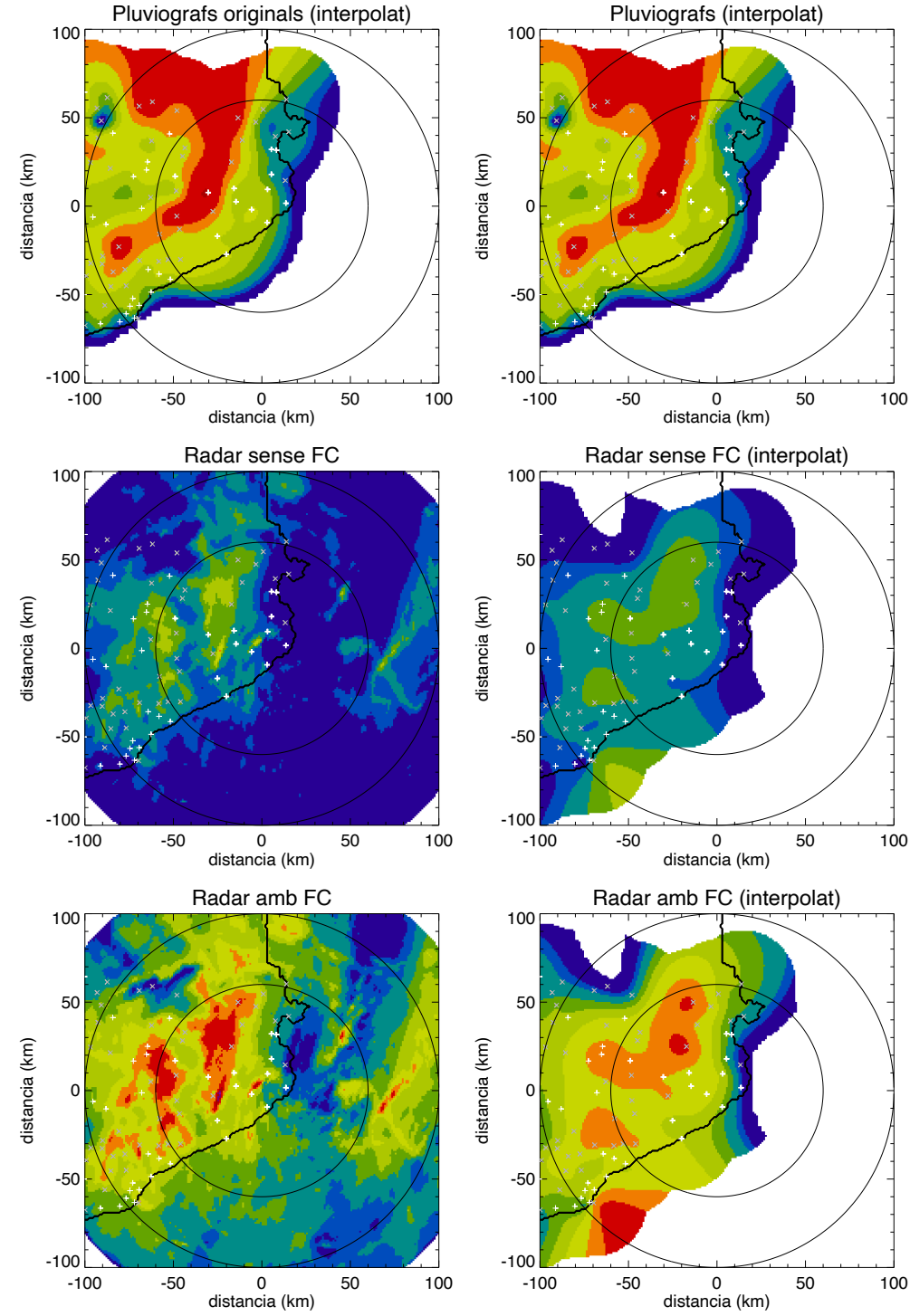


PDA: 20250311 – 20250314

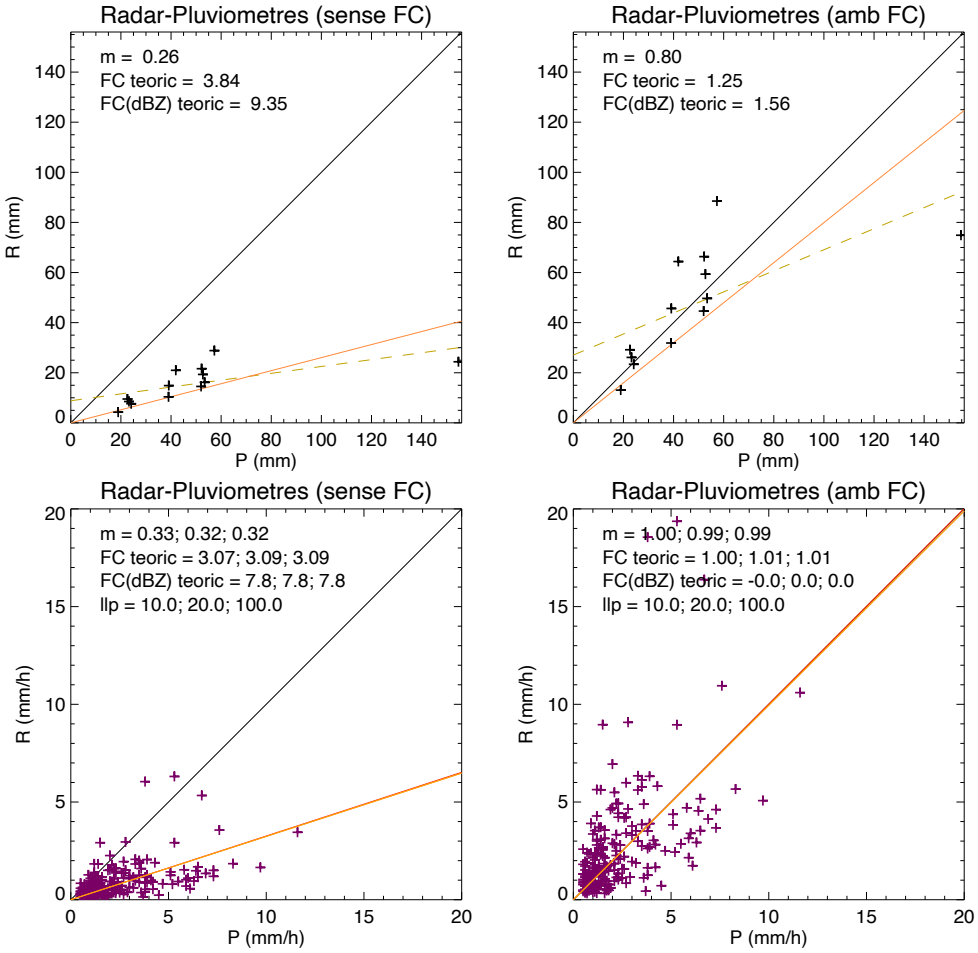


PDA: 20250318 – 20250325

lim= 300. fc aplicat= 3.07

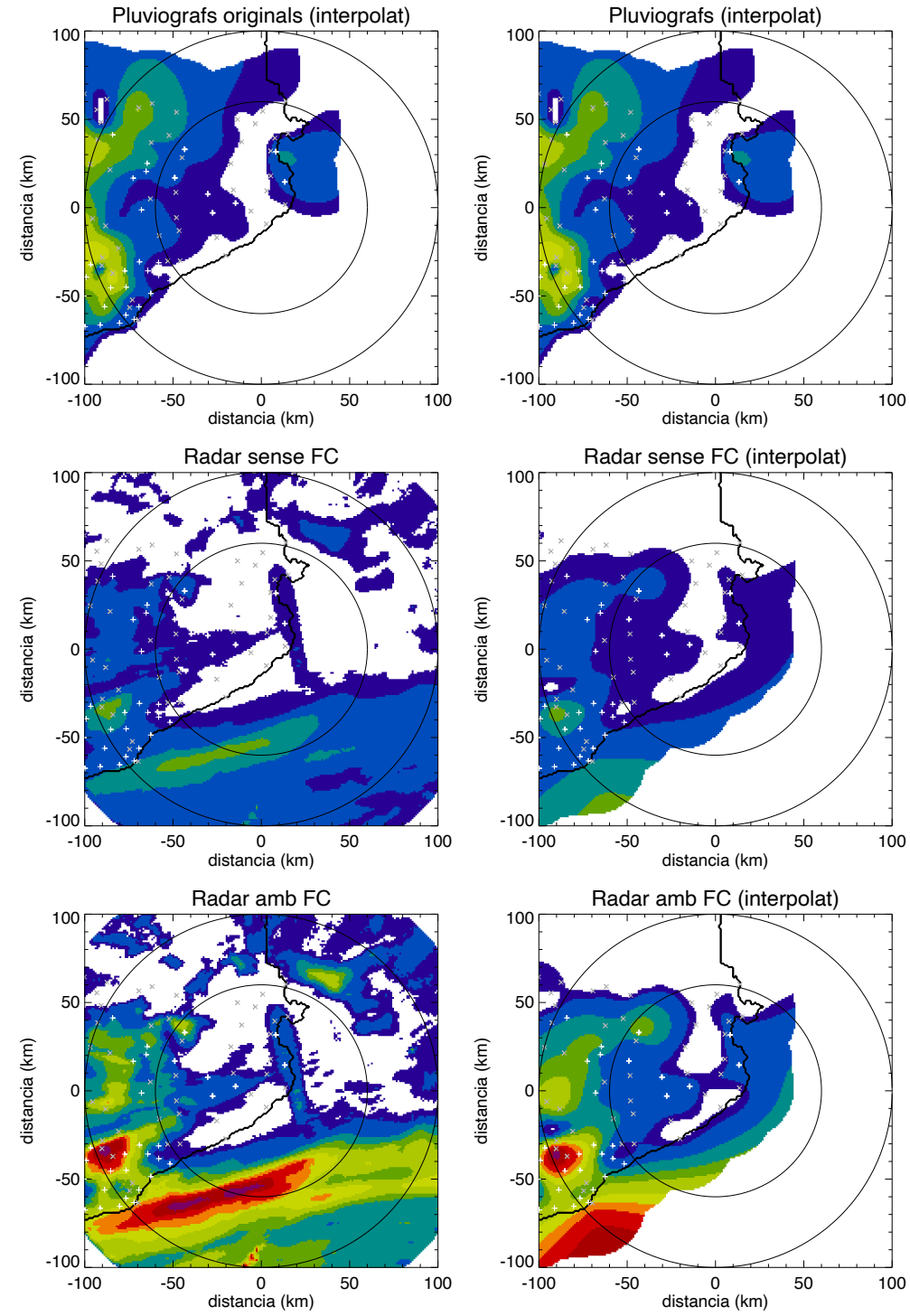


PDA: 20250318 – 20250325

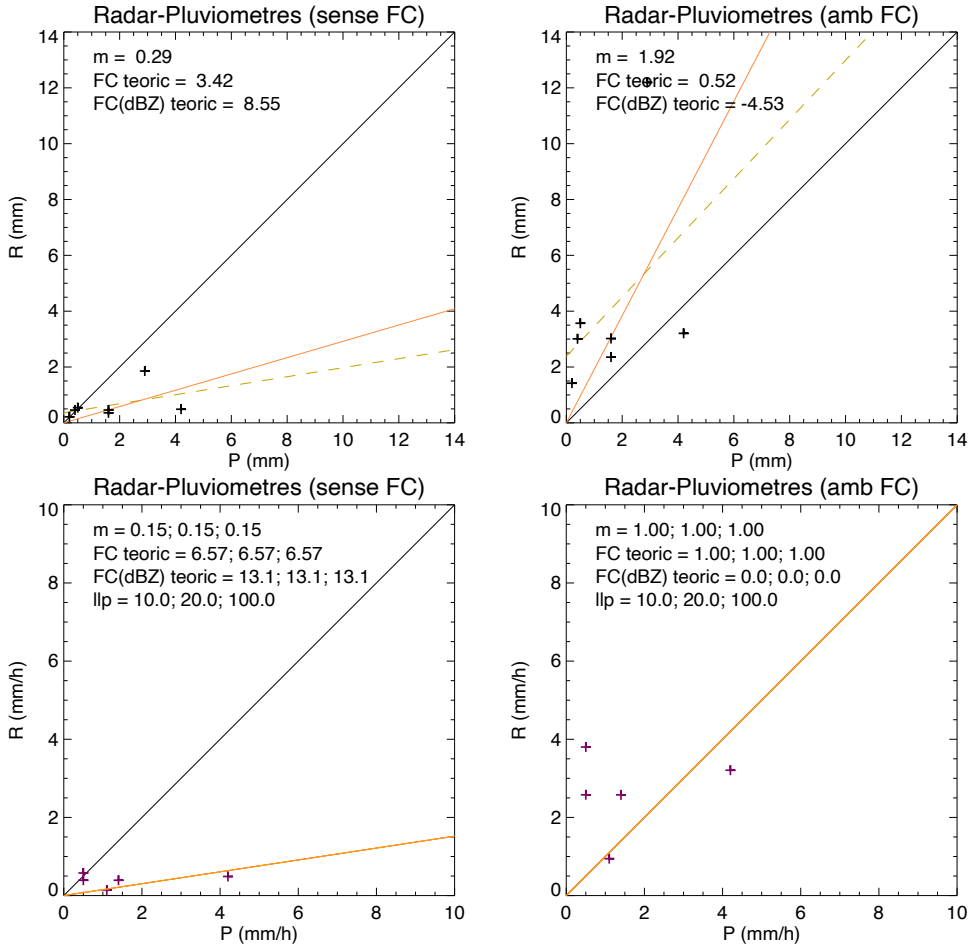


PDA: 20250402 – 20250402

lim= 150. fc aplicat= 6.57

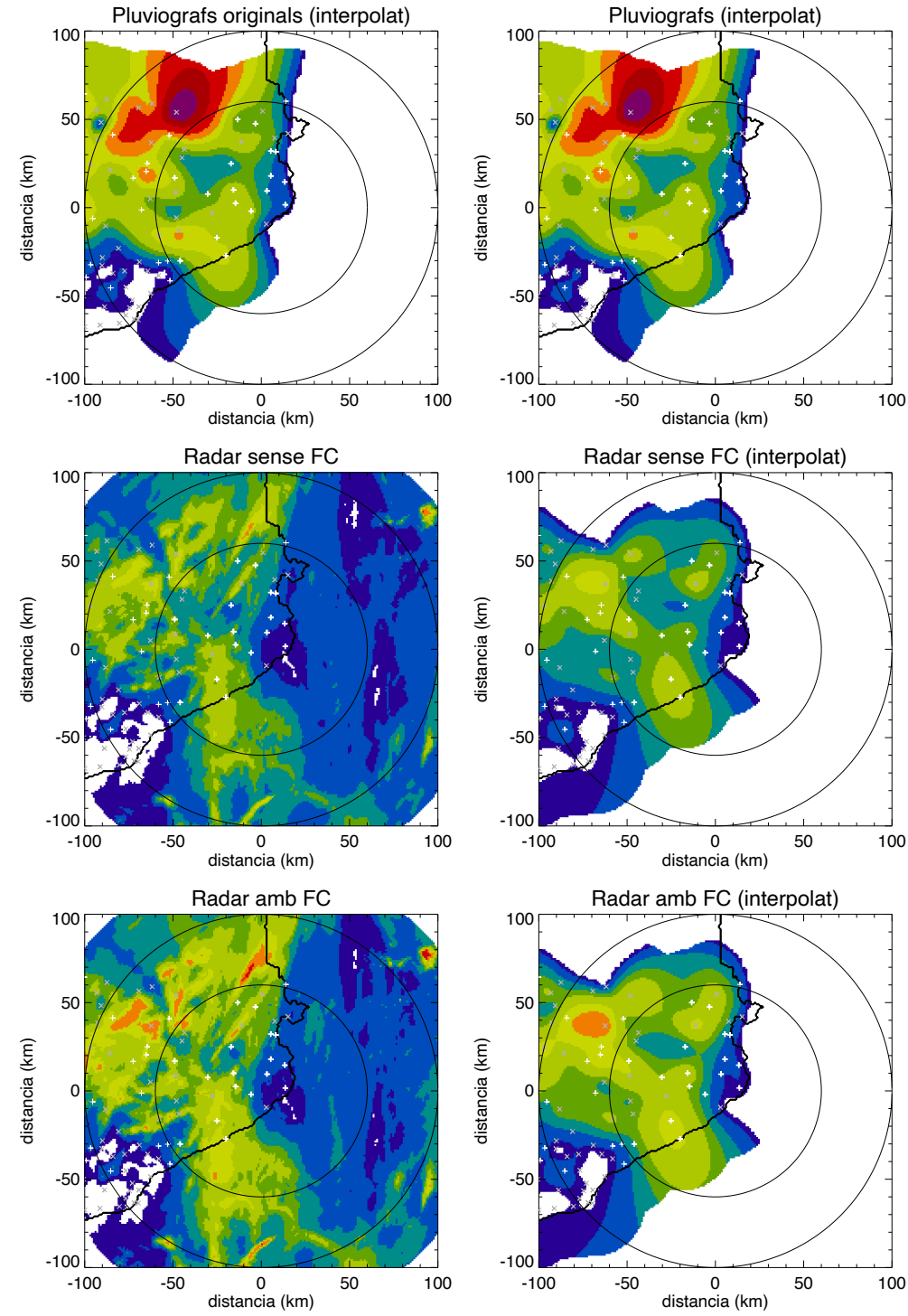


PDA: 20250402 – 20250402

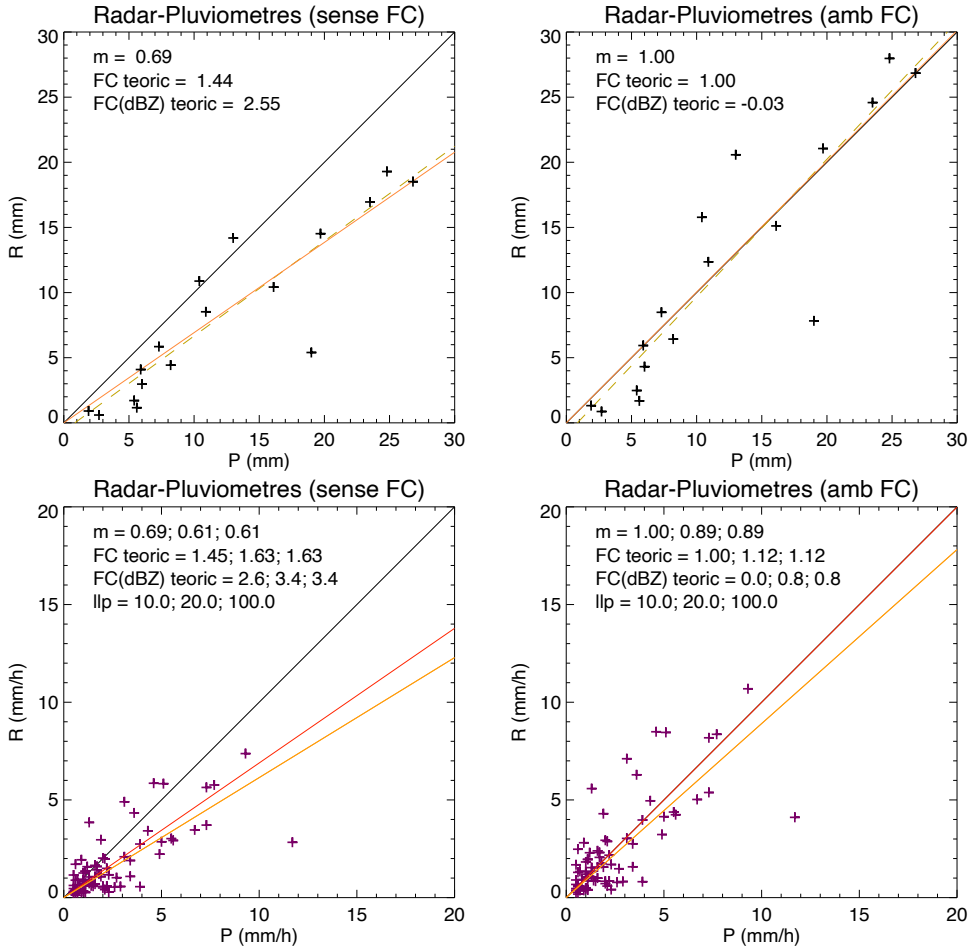


PDA: 20250412 – 20250416

lim= 200. fc aplicat= 1.45

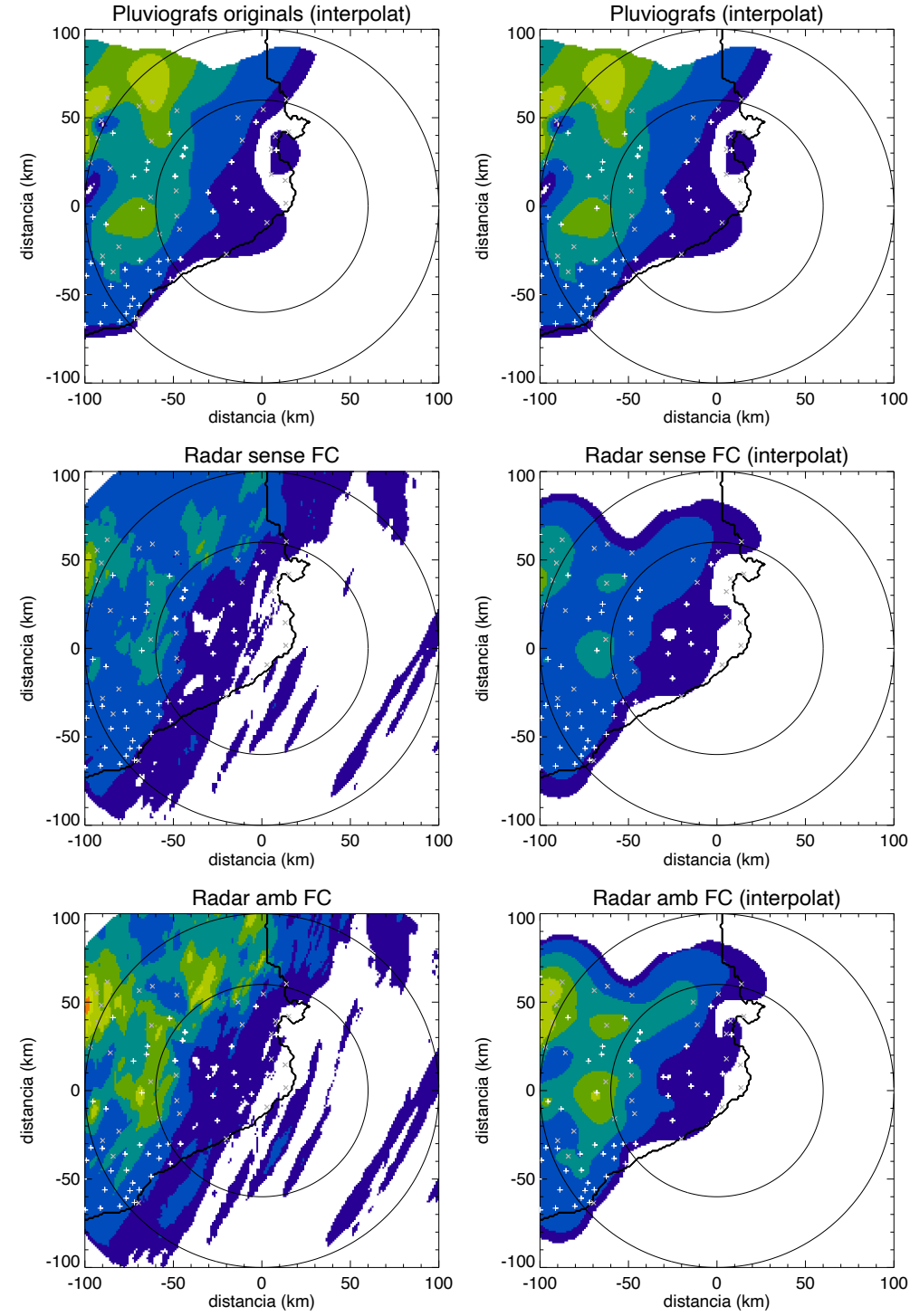


PDA: 20250412 – 20250416

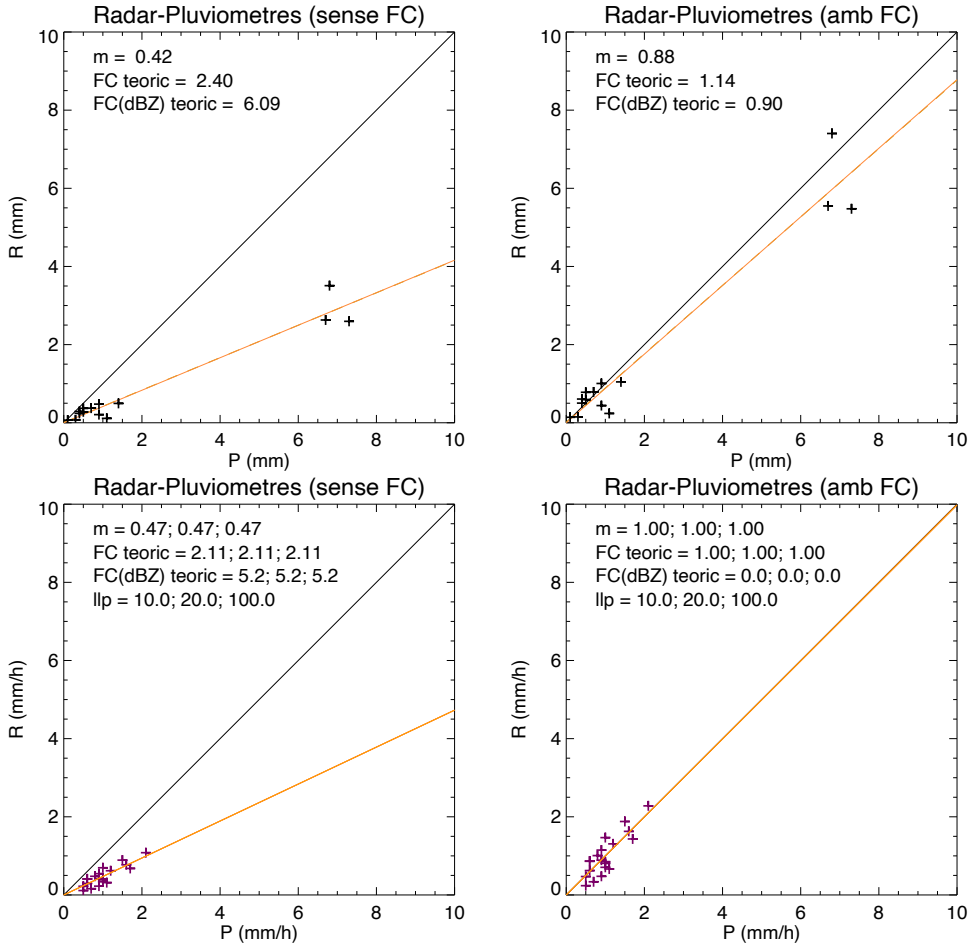


PDA: 20250419 – 20250419

lim= 150. fc aplicat= 2.11

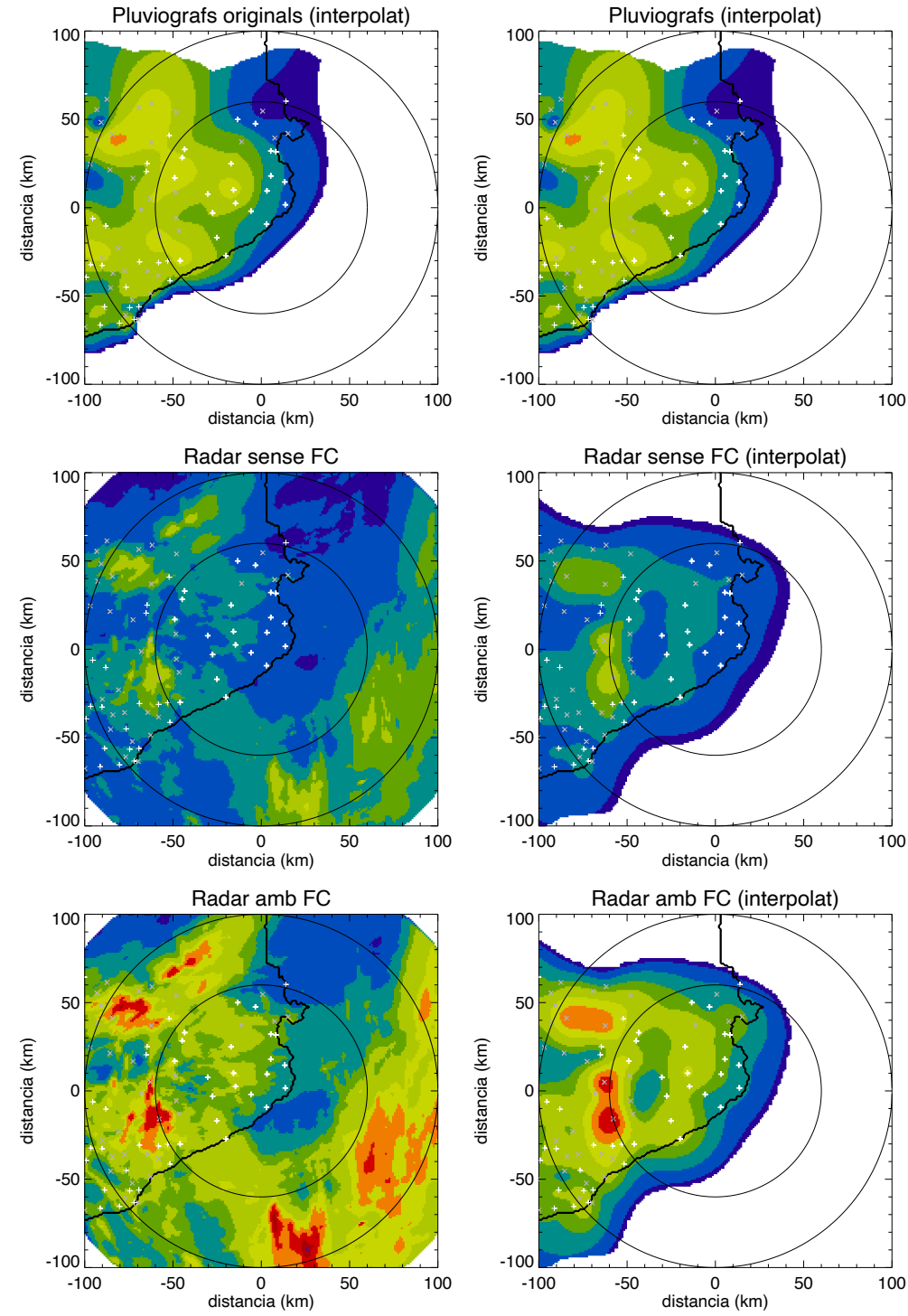


PDA: 20250419 – 20250419

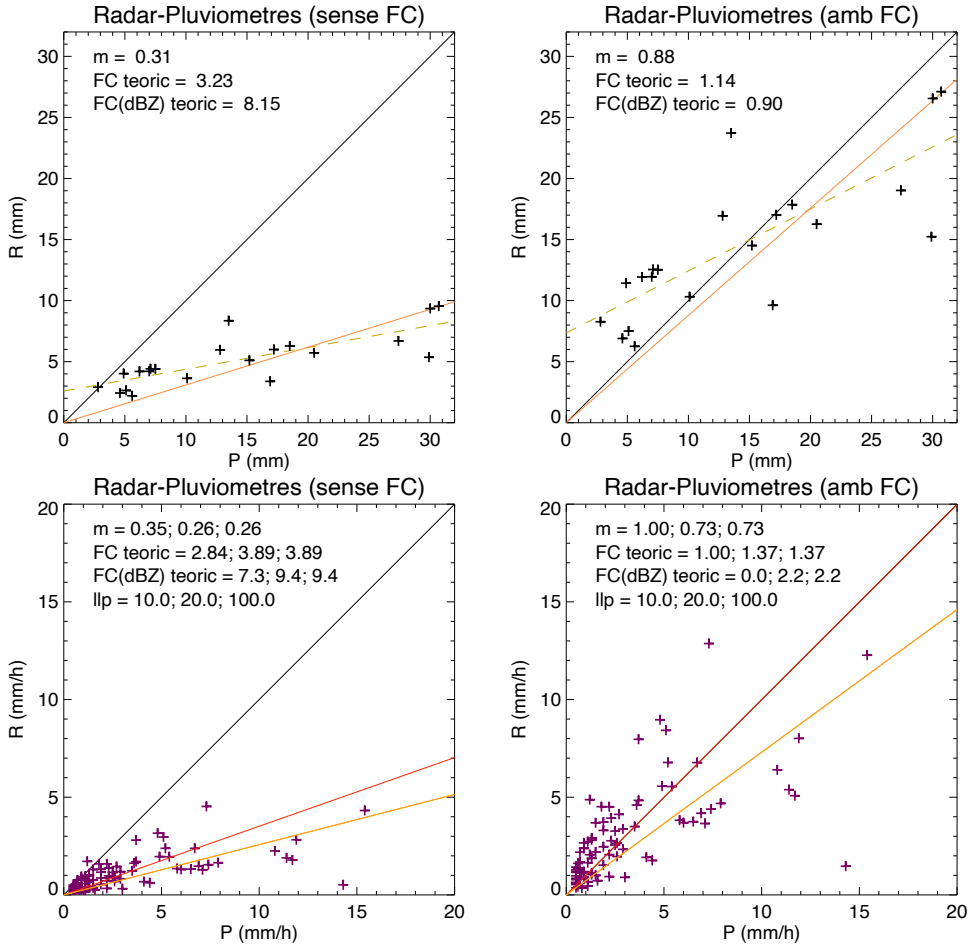


PDA: 20250426 – 20250427

lim= 150. fc aplicat= 2.84

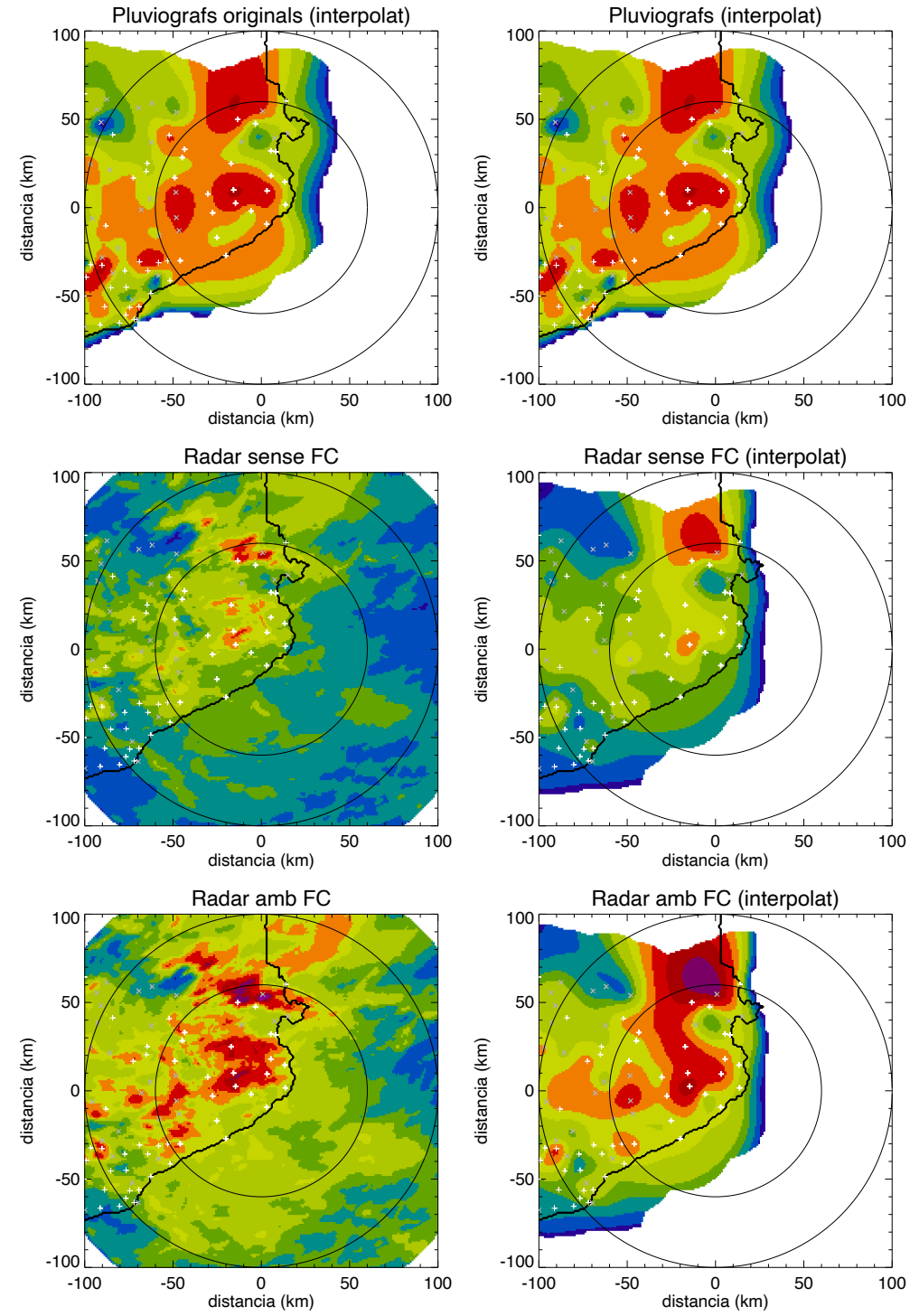


PDA: 20250426 – 20250427

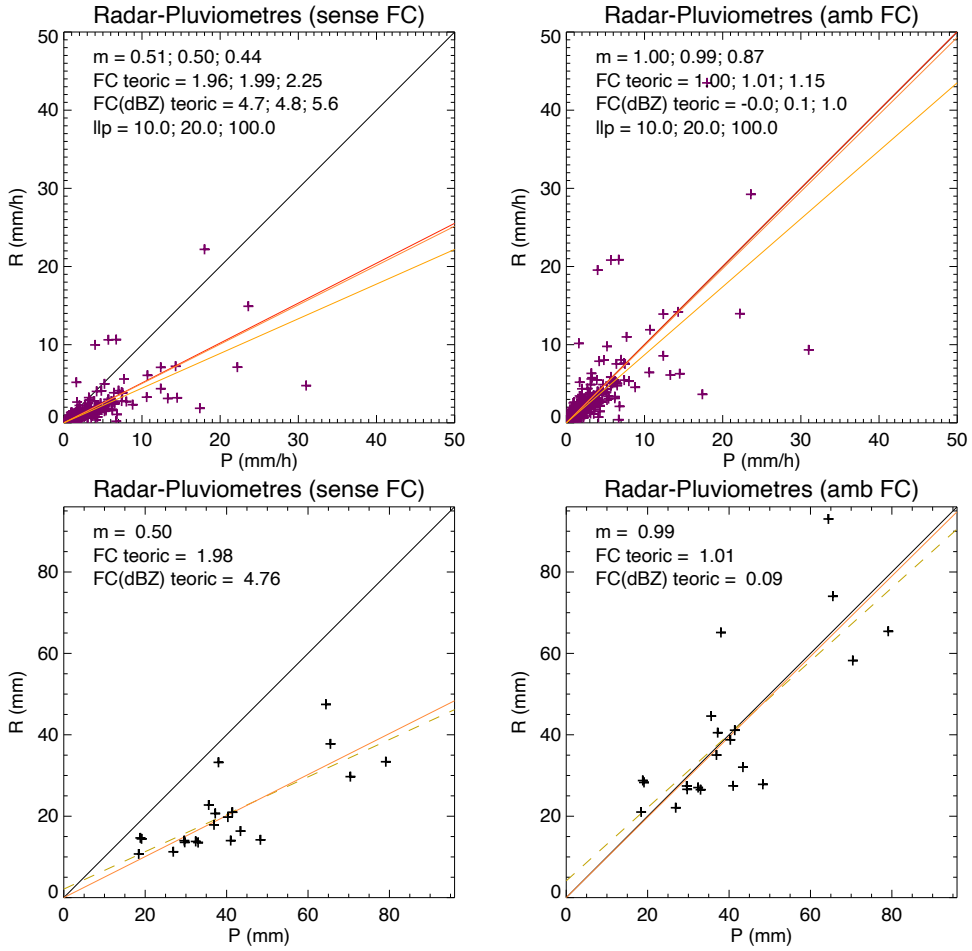


PDA: 20250504 – 20250506

lim= 200. fc aplicat= 1.96

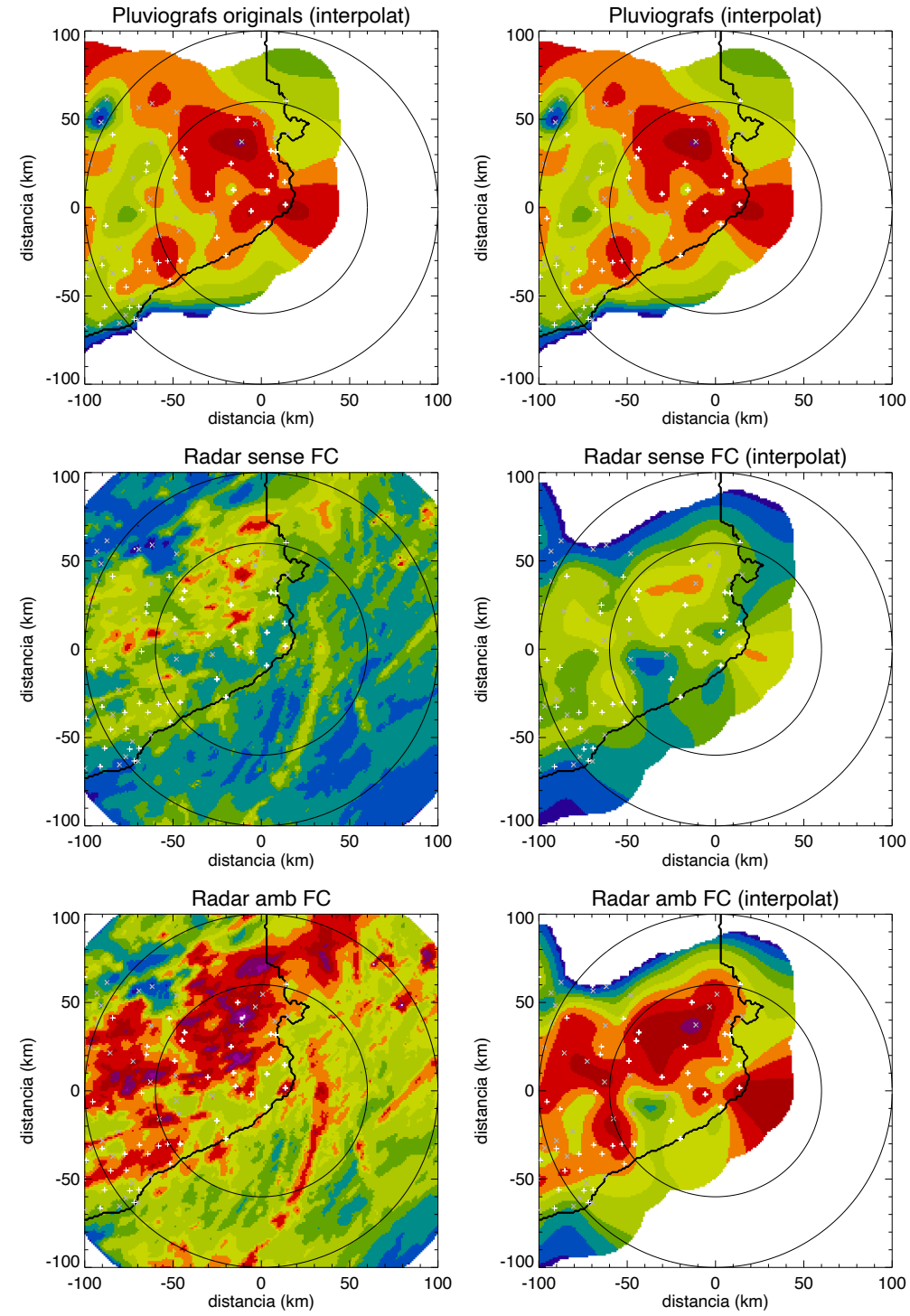


PDA: 20250504 – 20250506

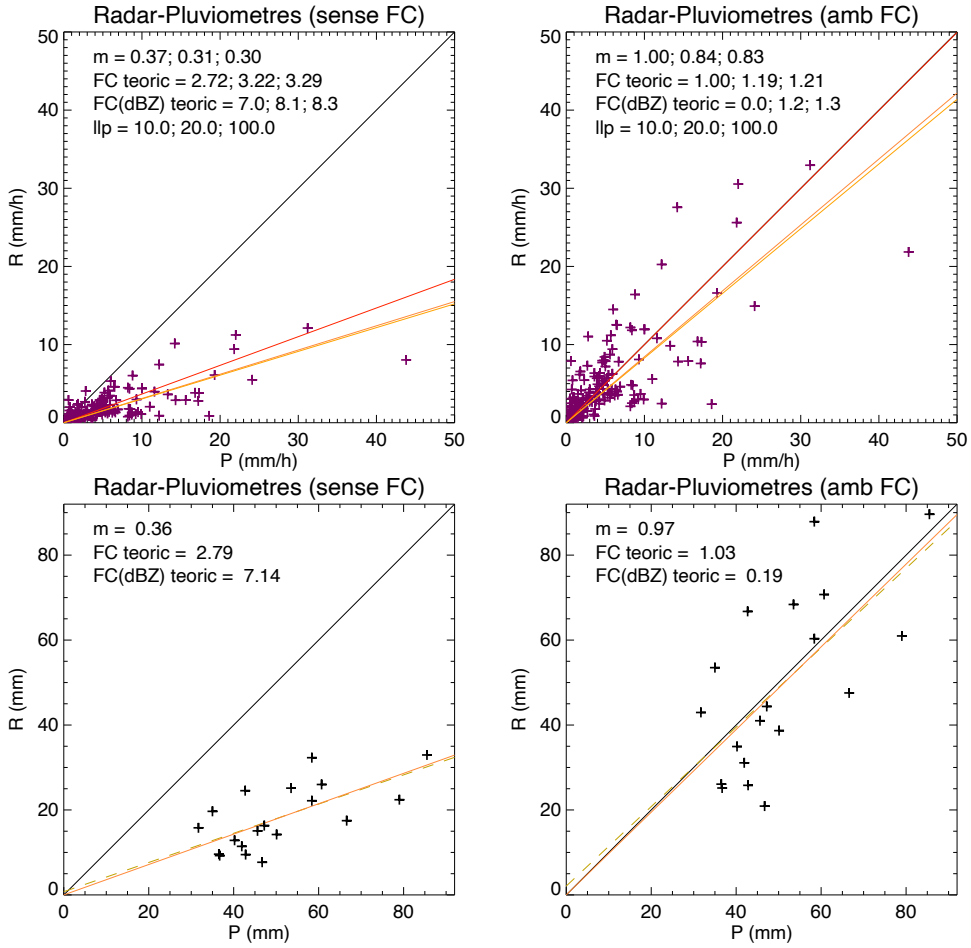


PDA: 20250508 – 20250514

lim= 200. fc aplicat= 2.72

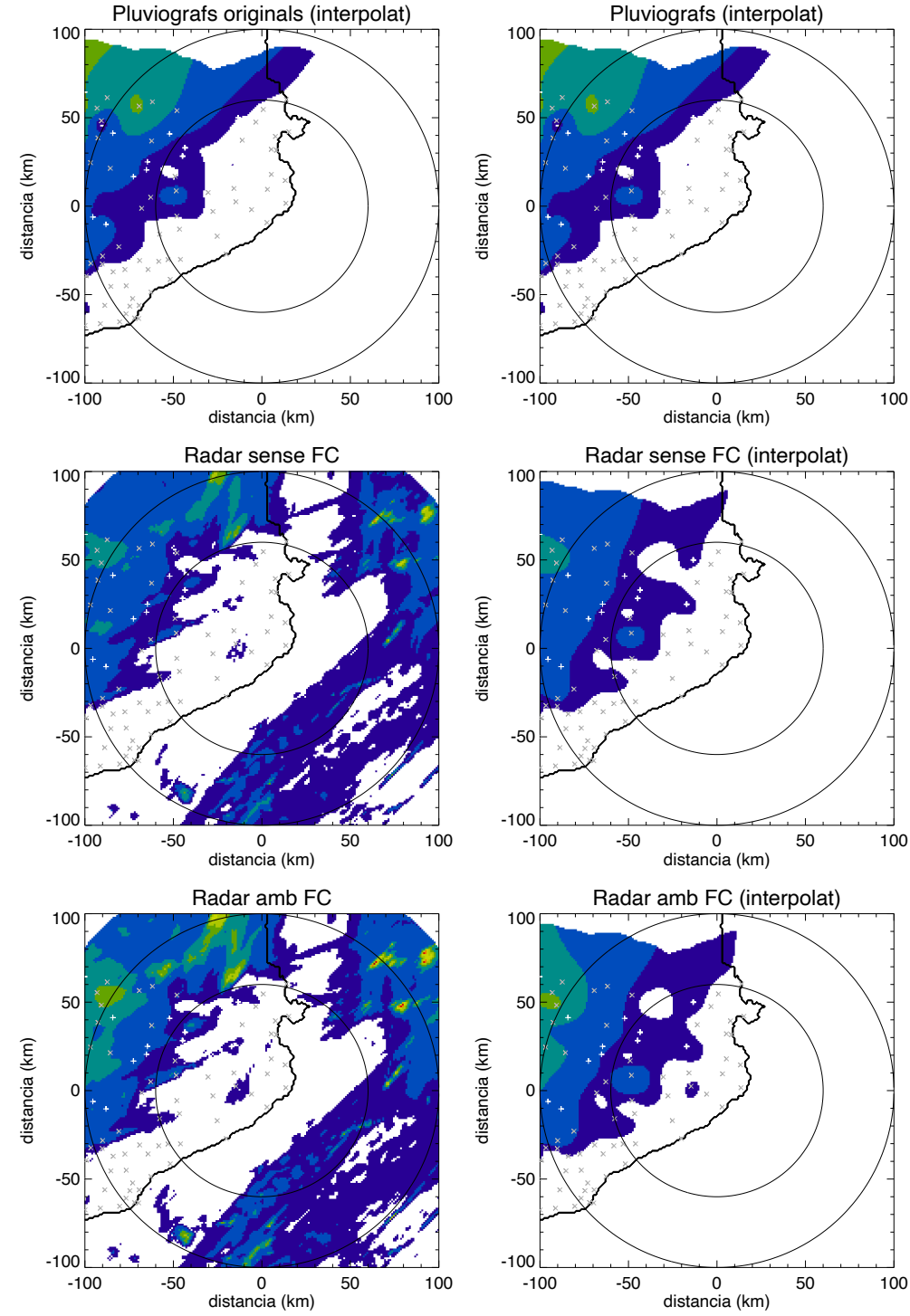


PDA: 20250508 – 20250514

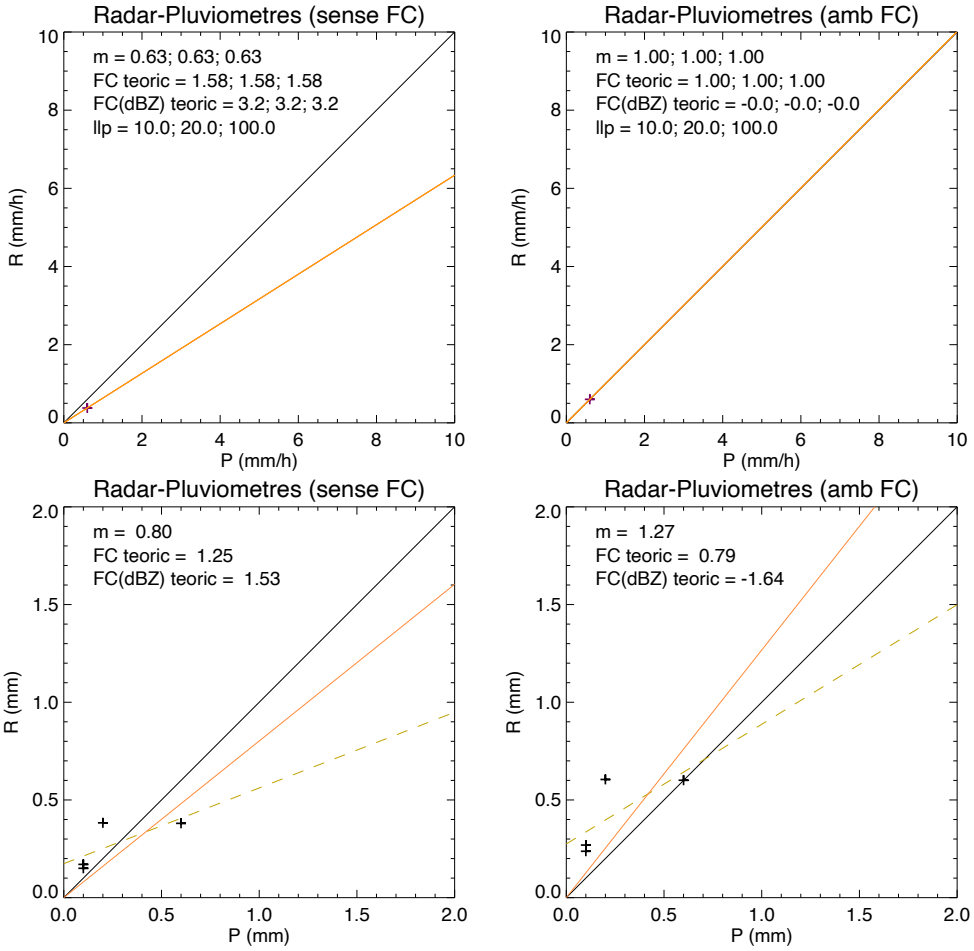


PDA: 20250519 – 20250519

lim= 150. fc aplicat= 1.58

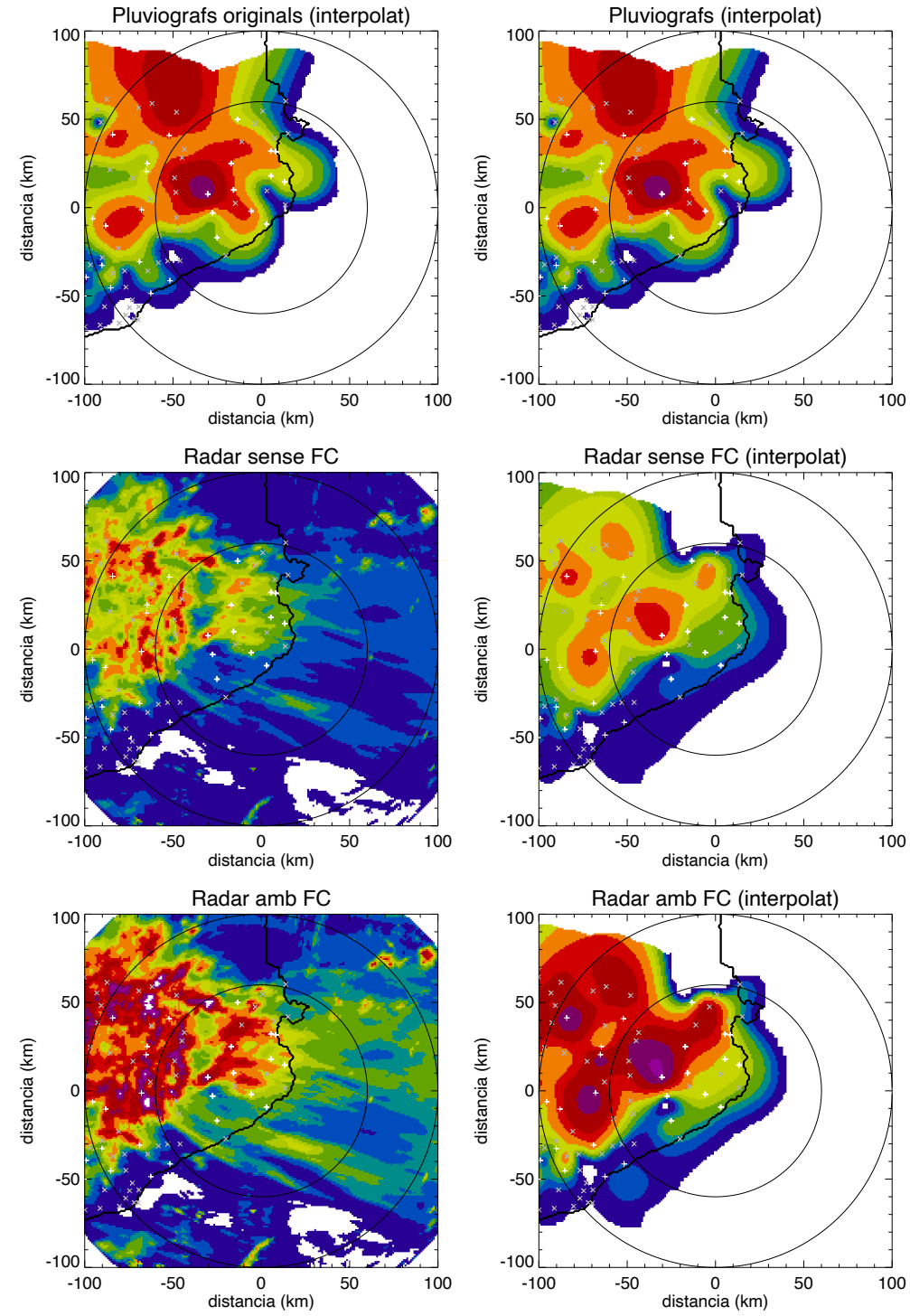


PDA: 20250519 – 20250519

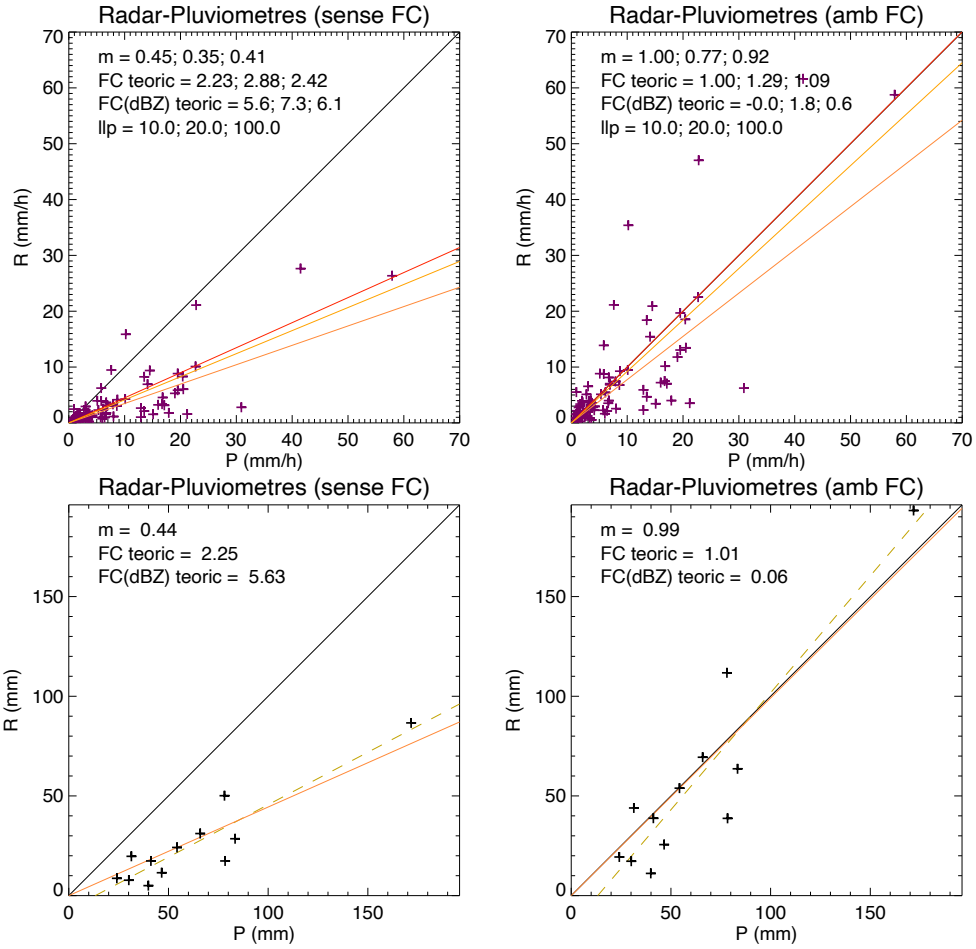


PDA: 20250630 – 20250707

lim= 250. fc aplicat= 2.23

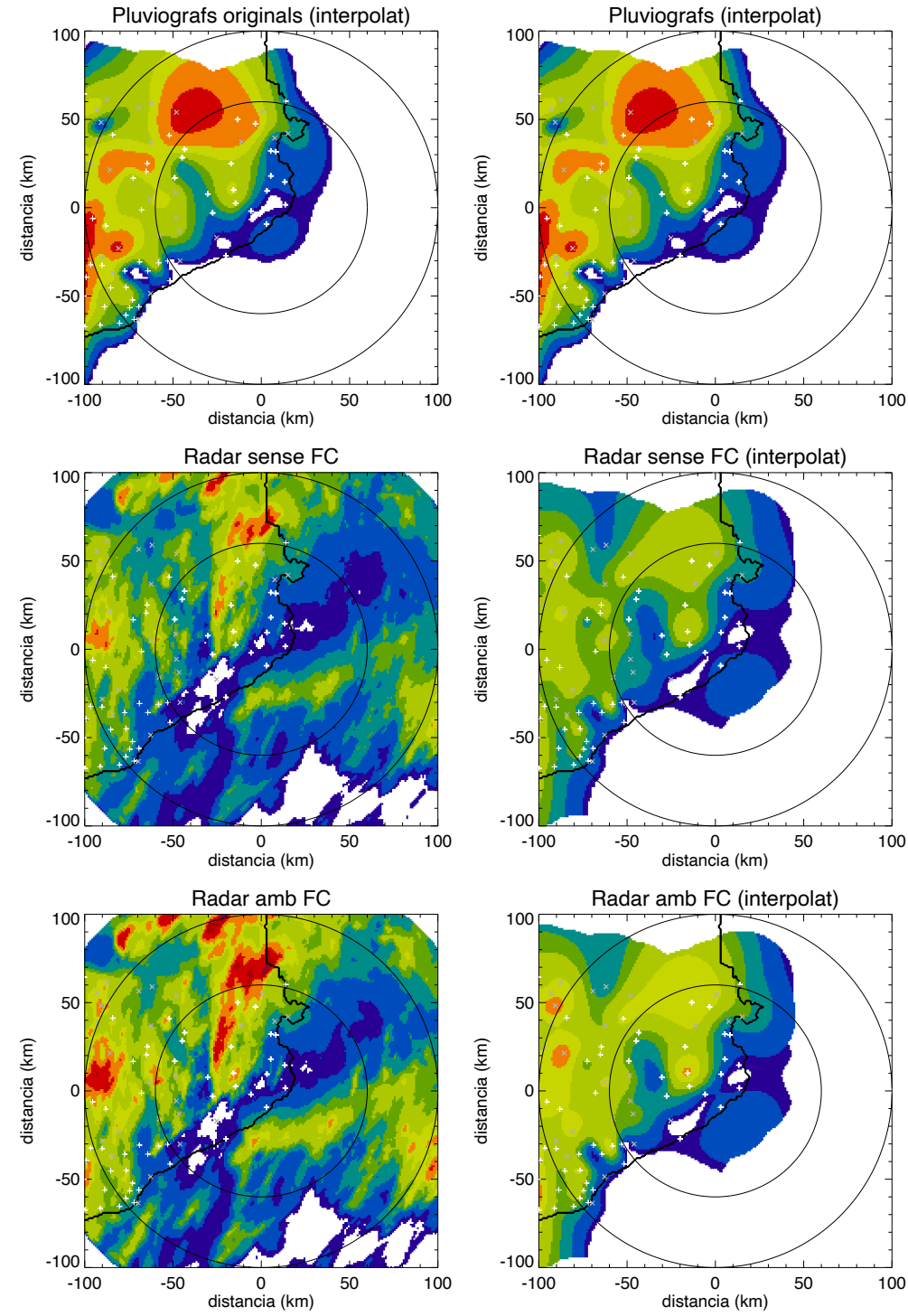


PDA: 20250630 – 20250707

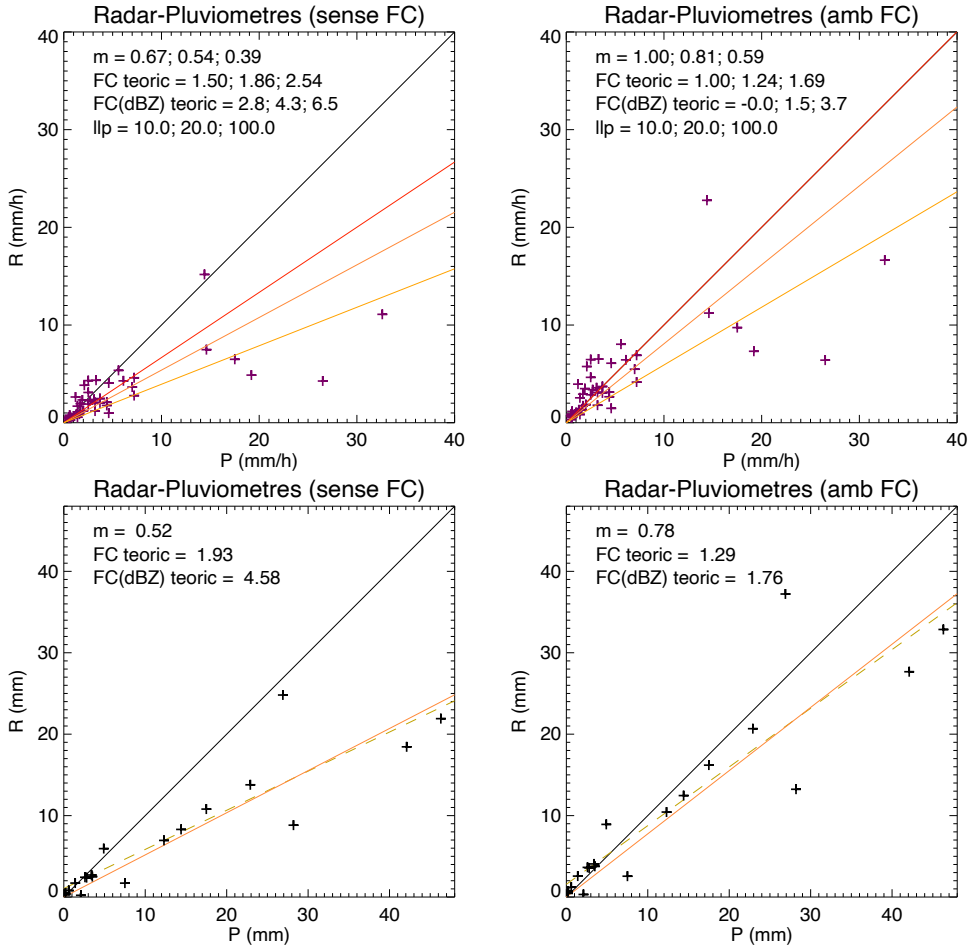


PDA: 20250712 – 20250712

lim= 200. fc aplicat= 1.50

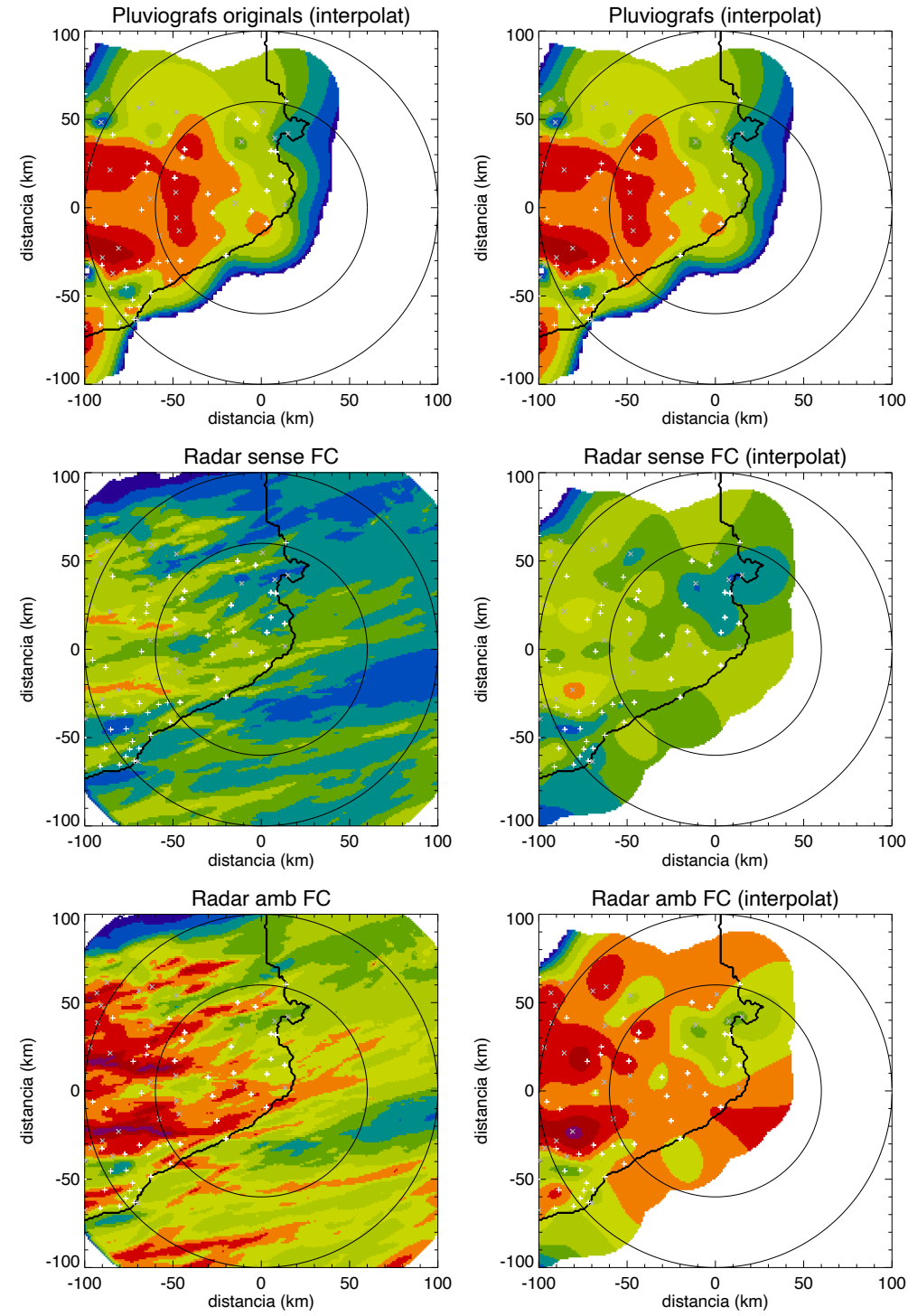


PDA: 20250712 – 20250712

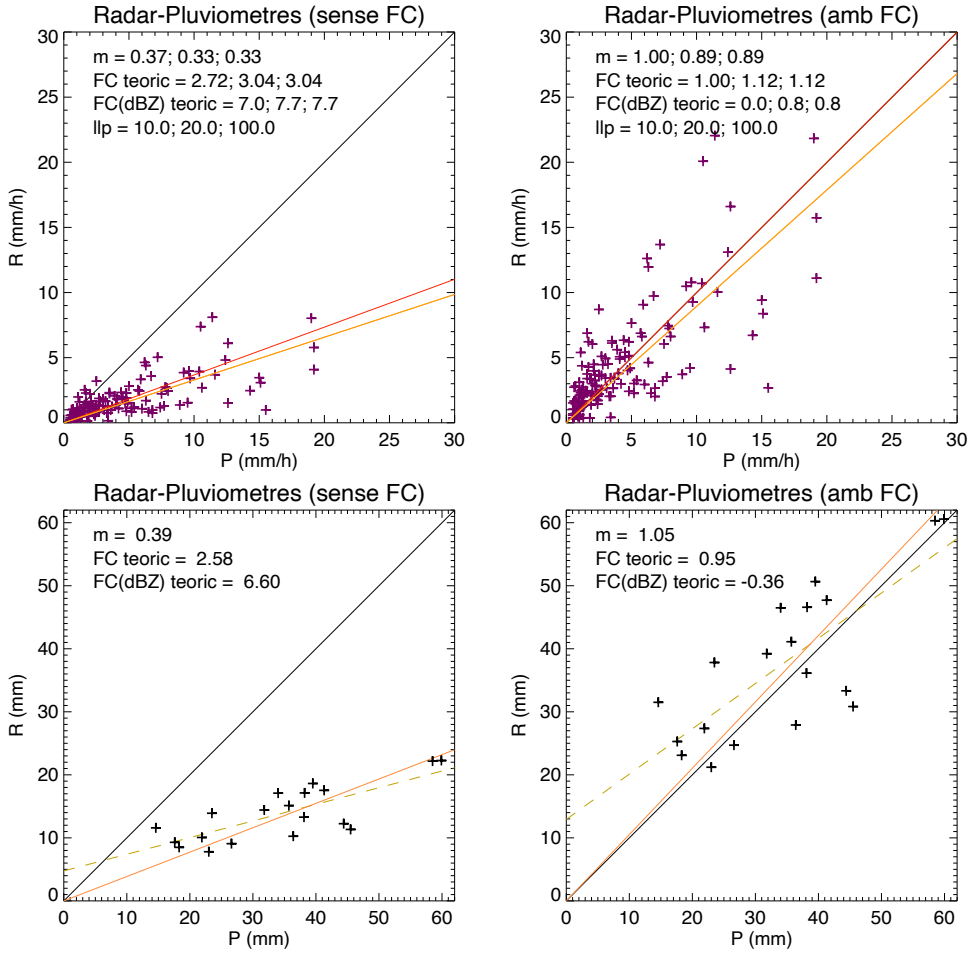


PDA: 20250723 – 20250724

lim= 200. fc aplicat= 2.72

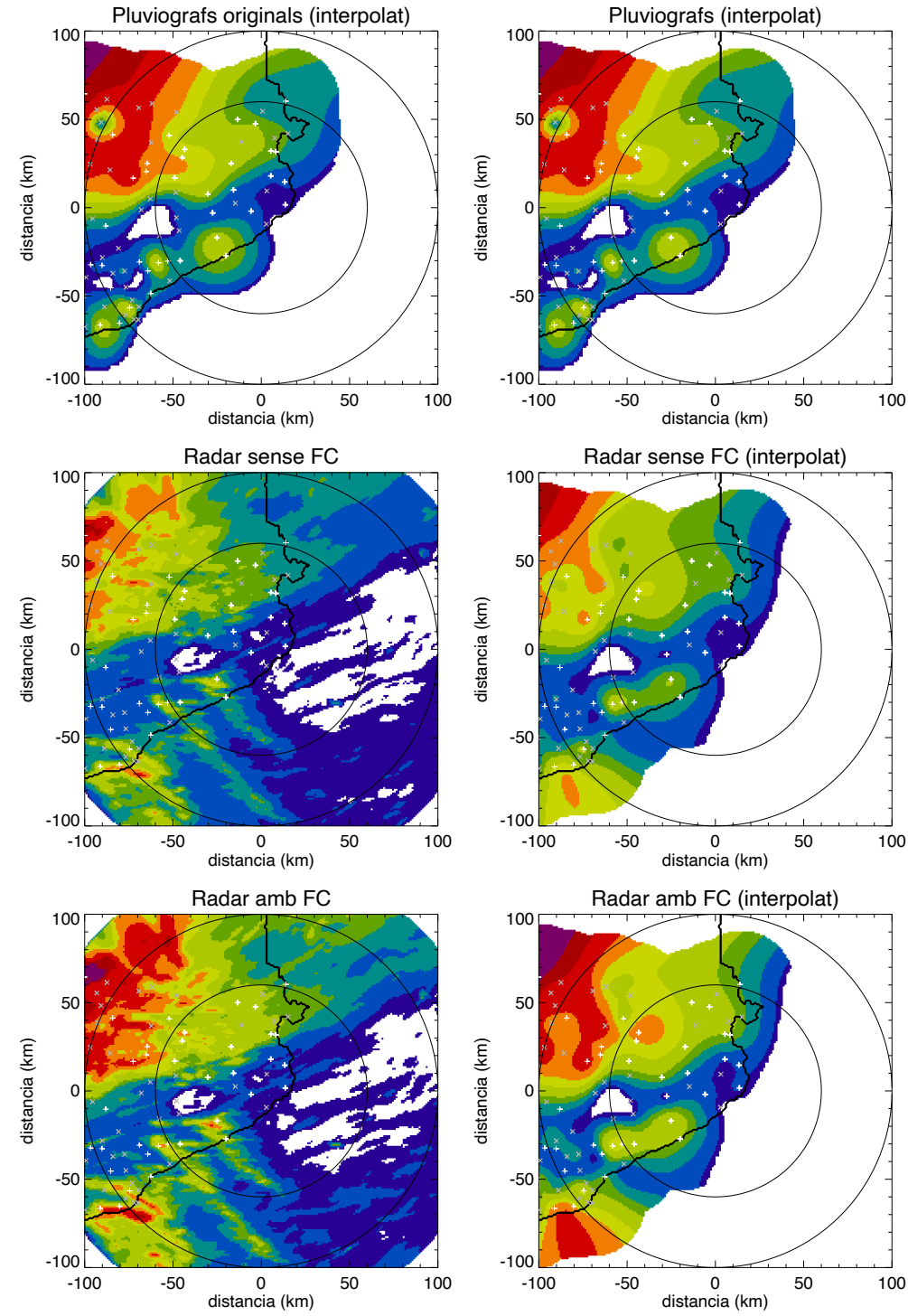


PDA: 20250723 – 20250724

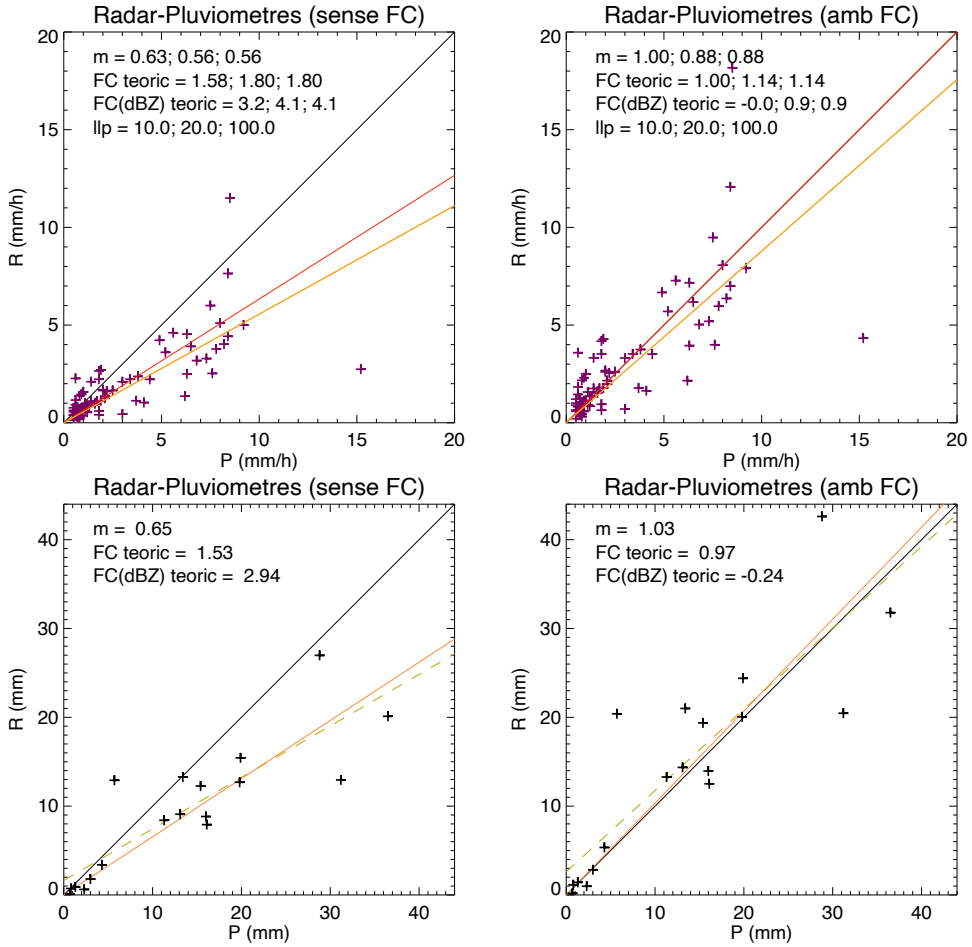


PDA: 20250818 – 20250820

lim= 200. fc aplicat= 1.58

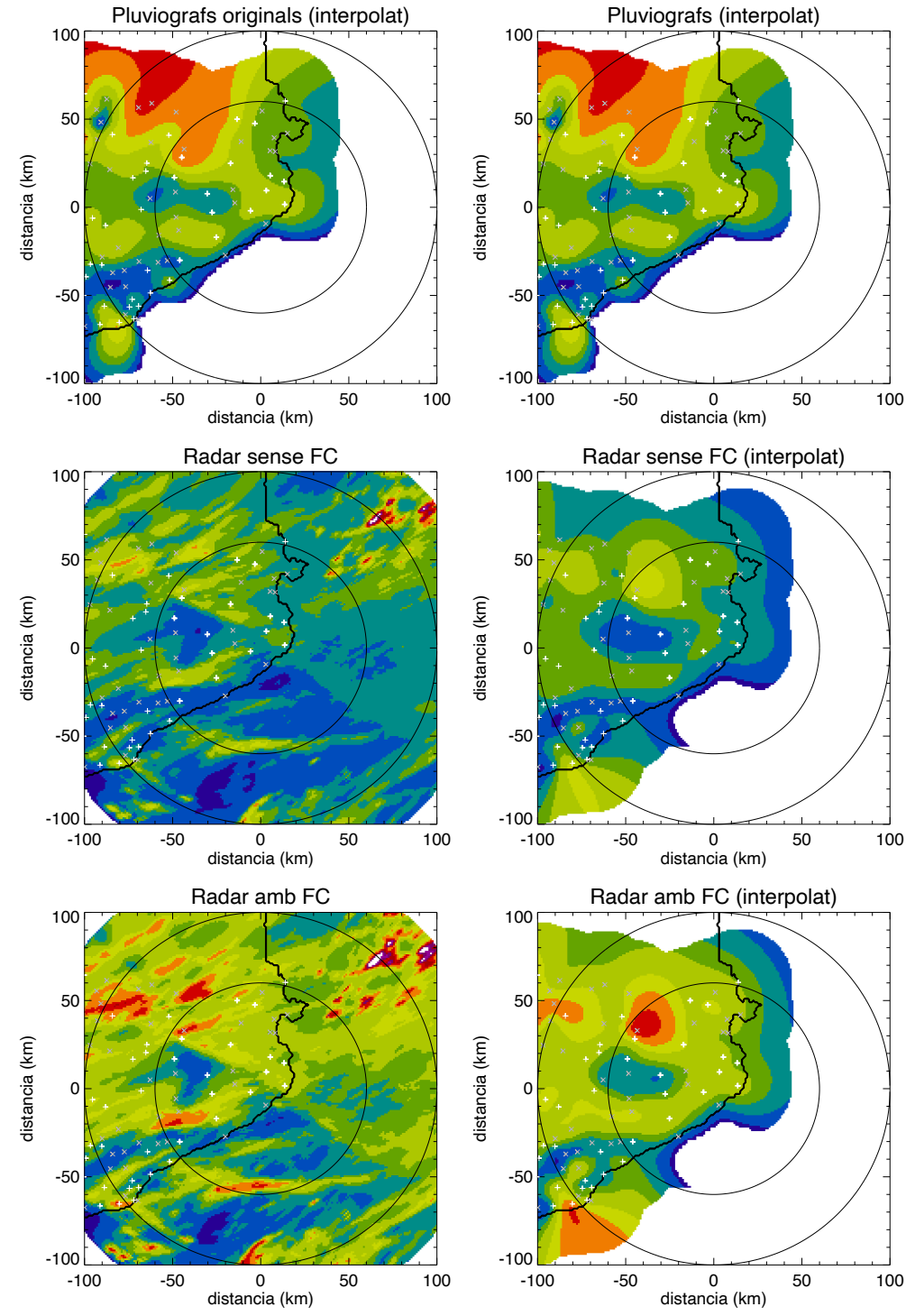


PDA: 20250818 – 20250820

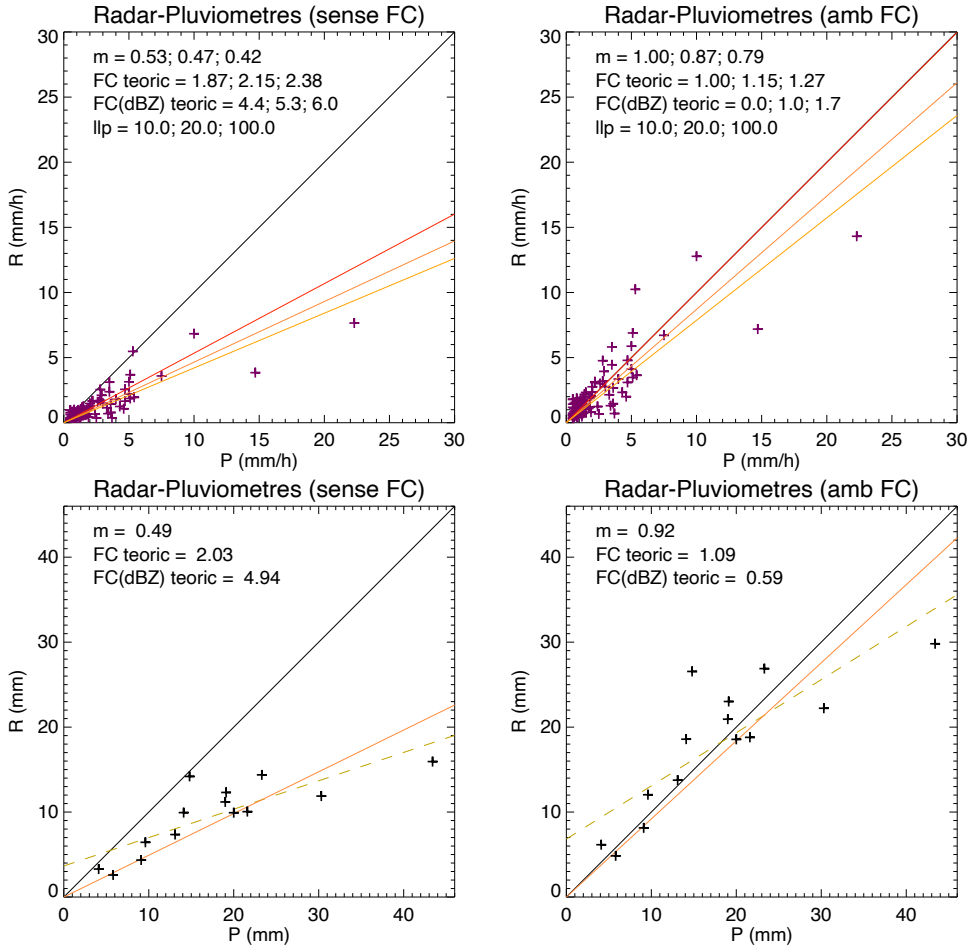


PDA: 20250827 – 20250829

lim= 200. fc aplicat= 1.87

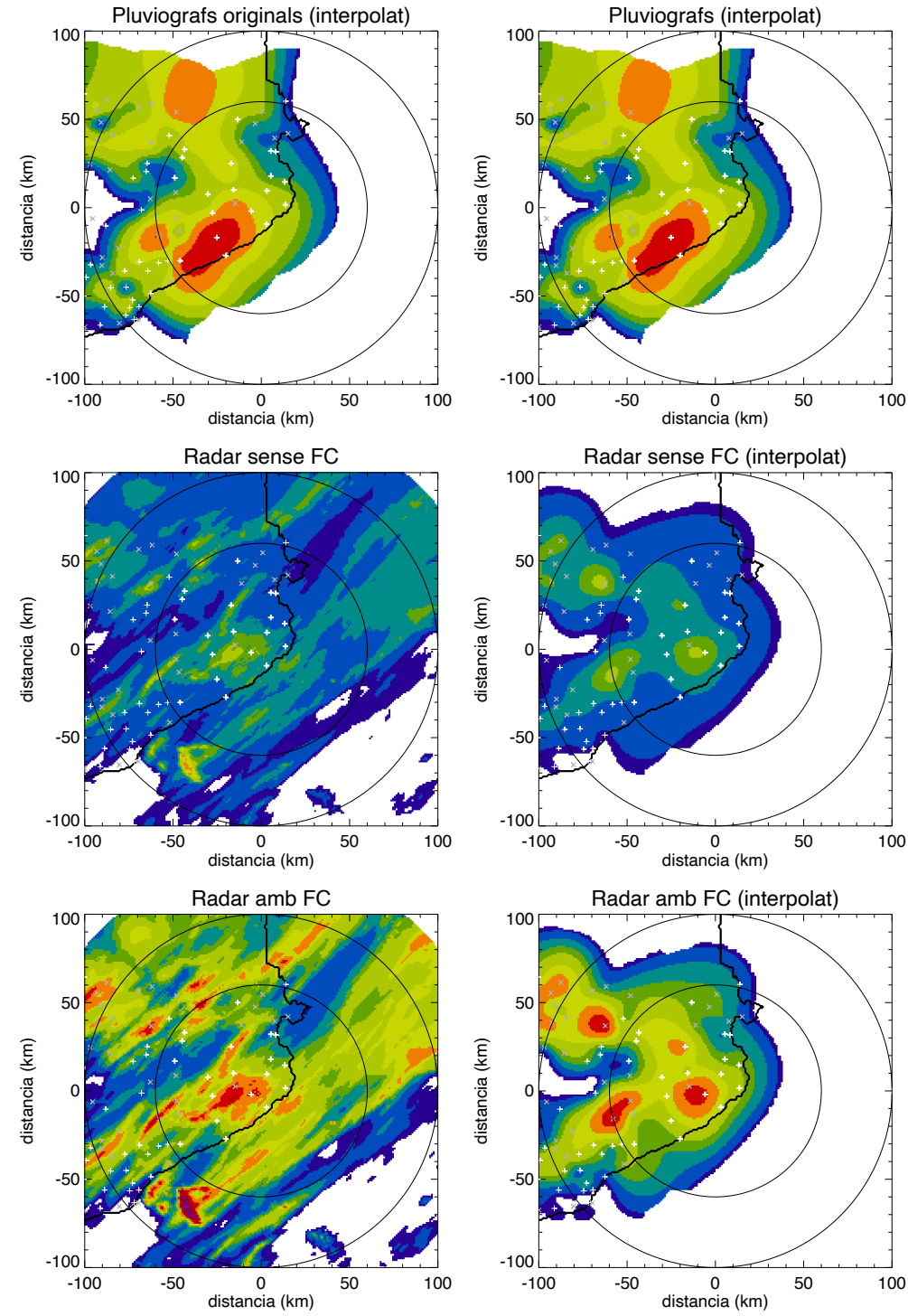


PDA: 20250827 – 20250829

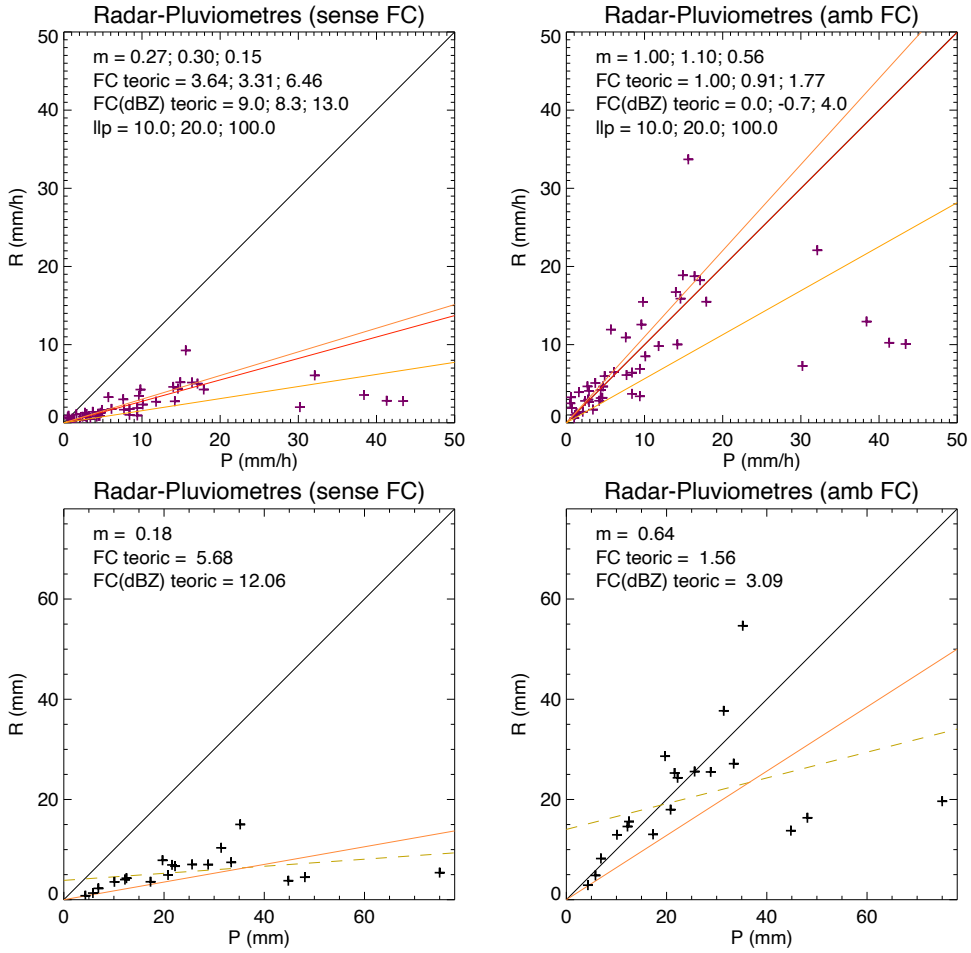


PDA: 20250831 – 20250901

lim= 200. fc aplicat= 3.64

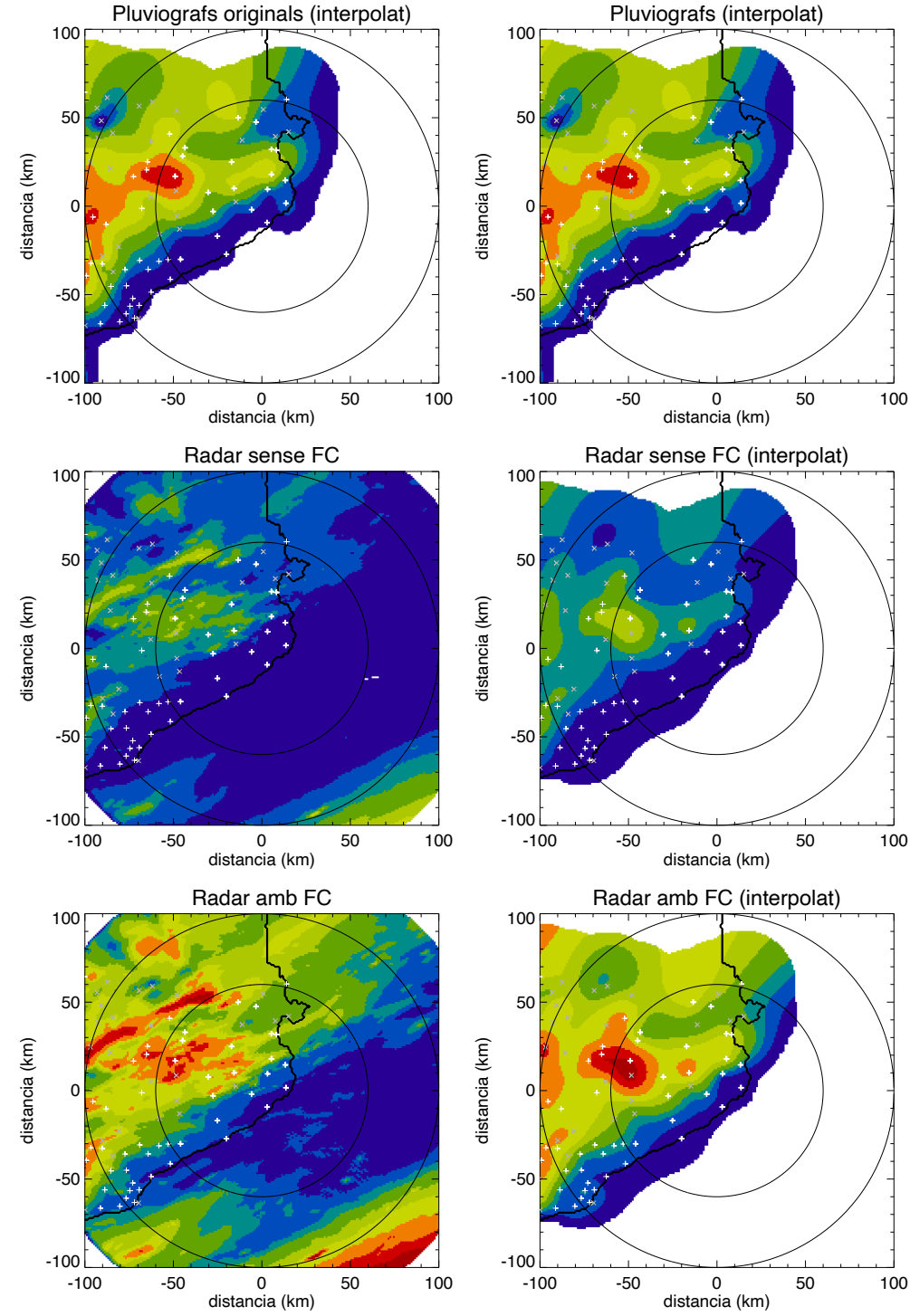


PDA: 20250831 – 20250901

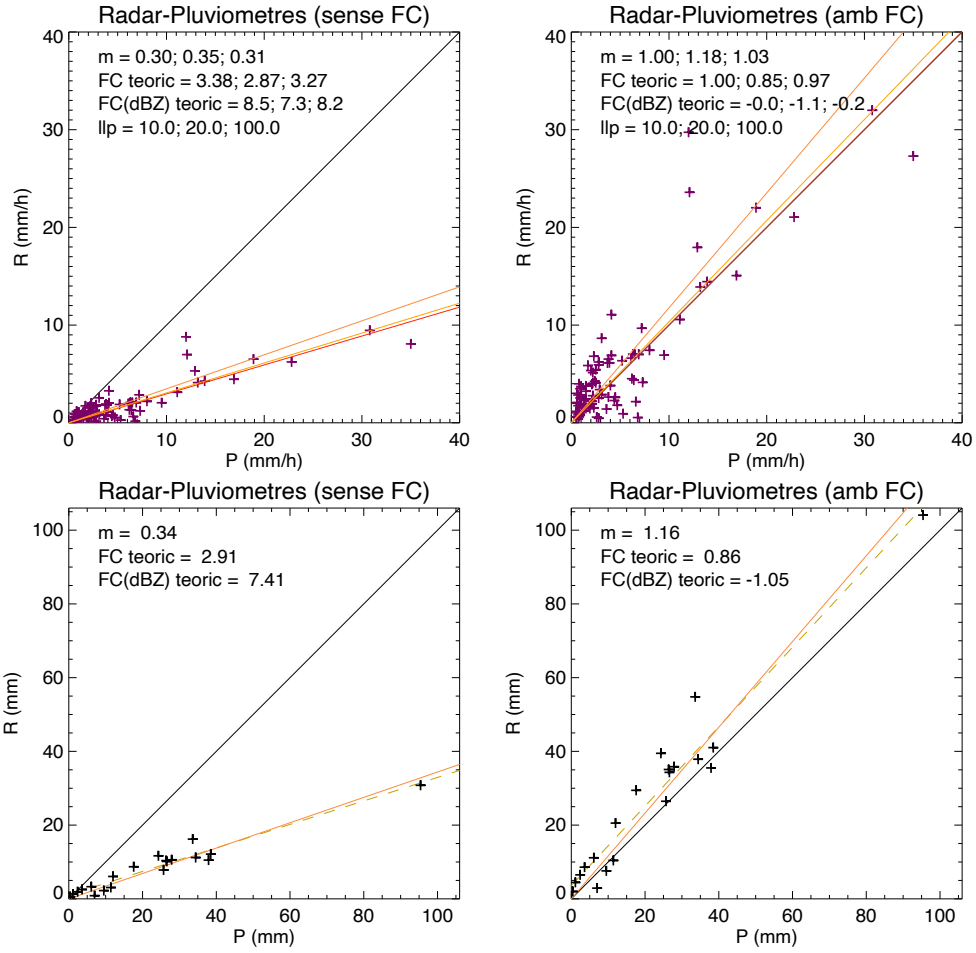


PDA: 20250908 – 20250909

lim= 250. fc aplicat= 3.38

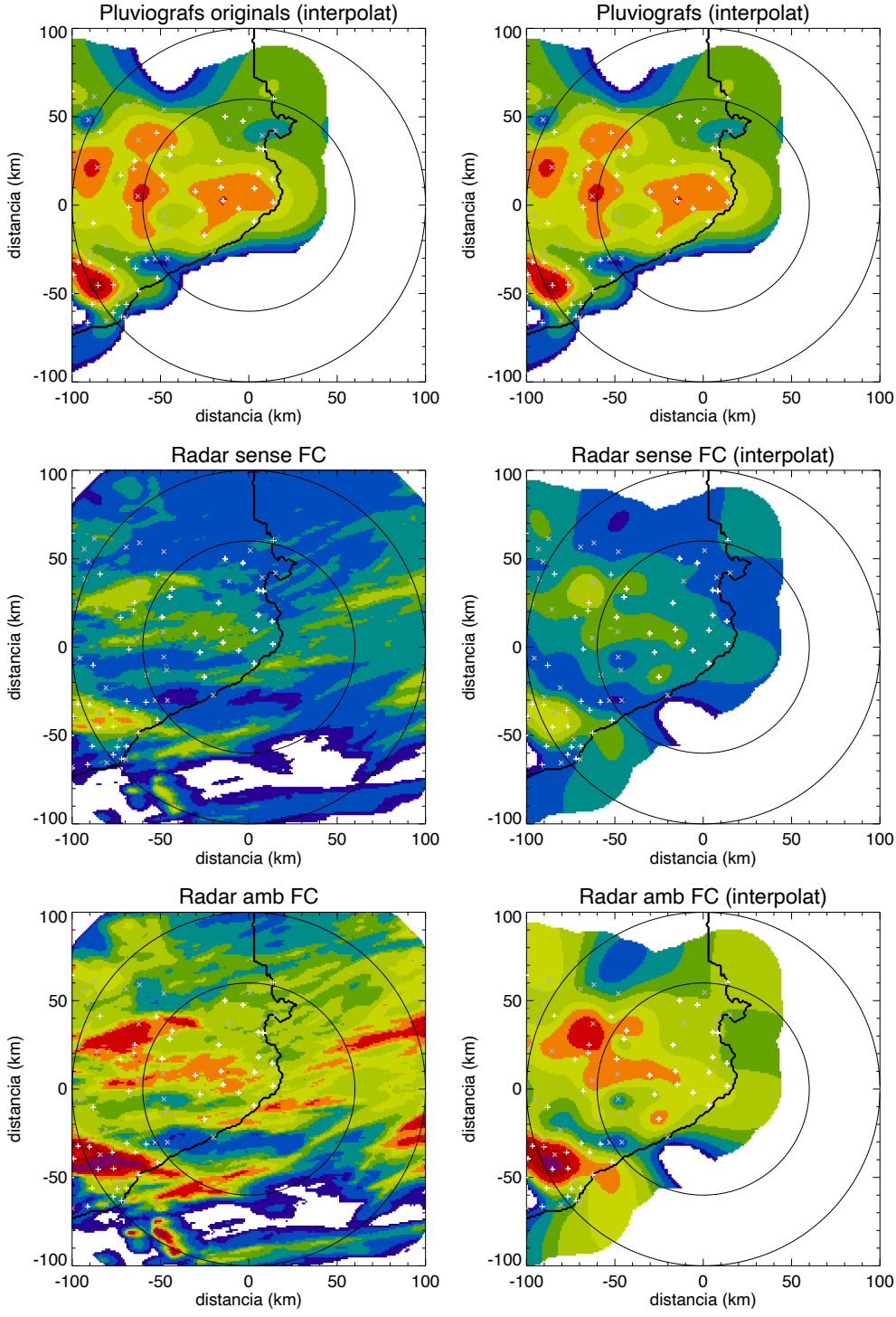


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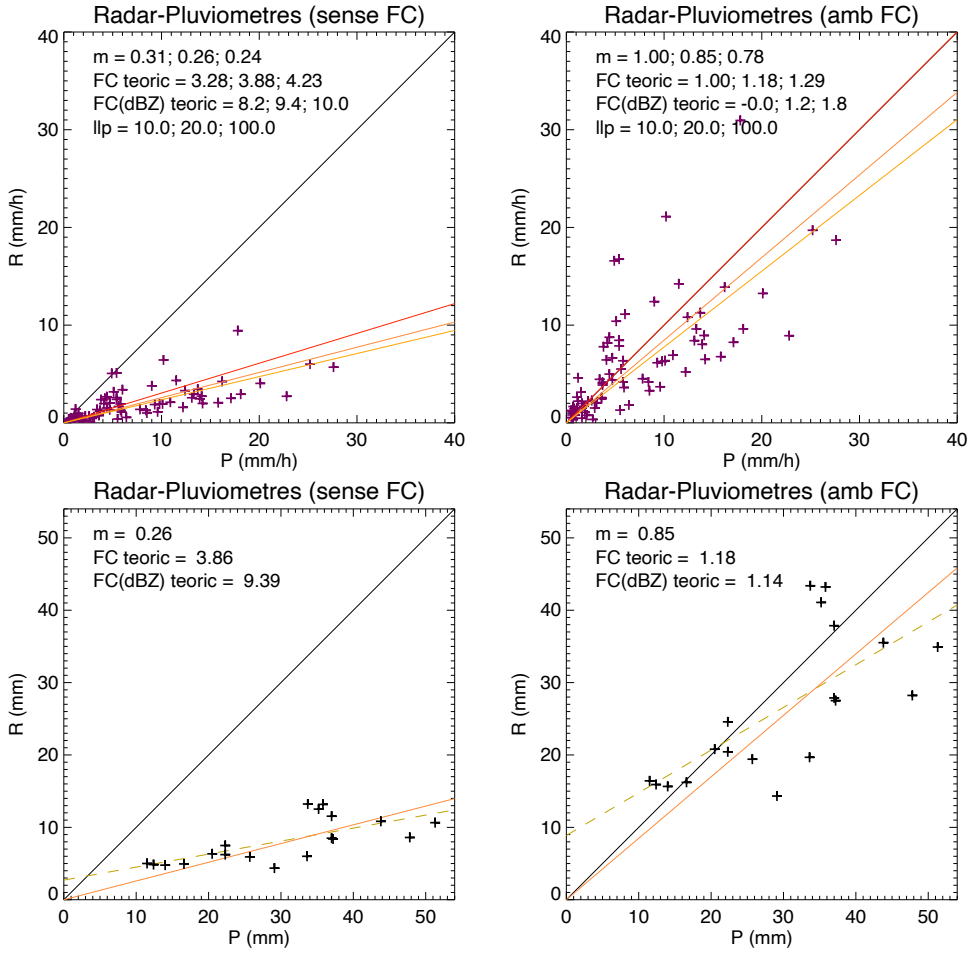


PDA: 20250912 – 20250913

lim= 200. fc aplicat= 3.28

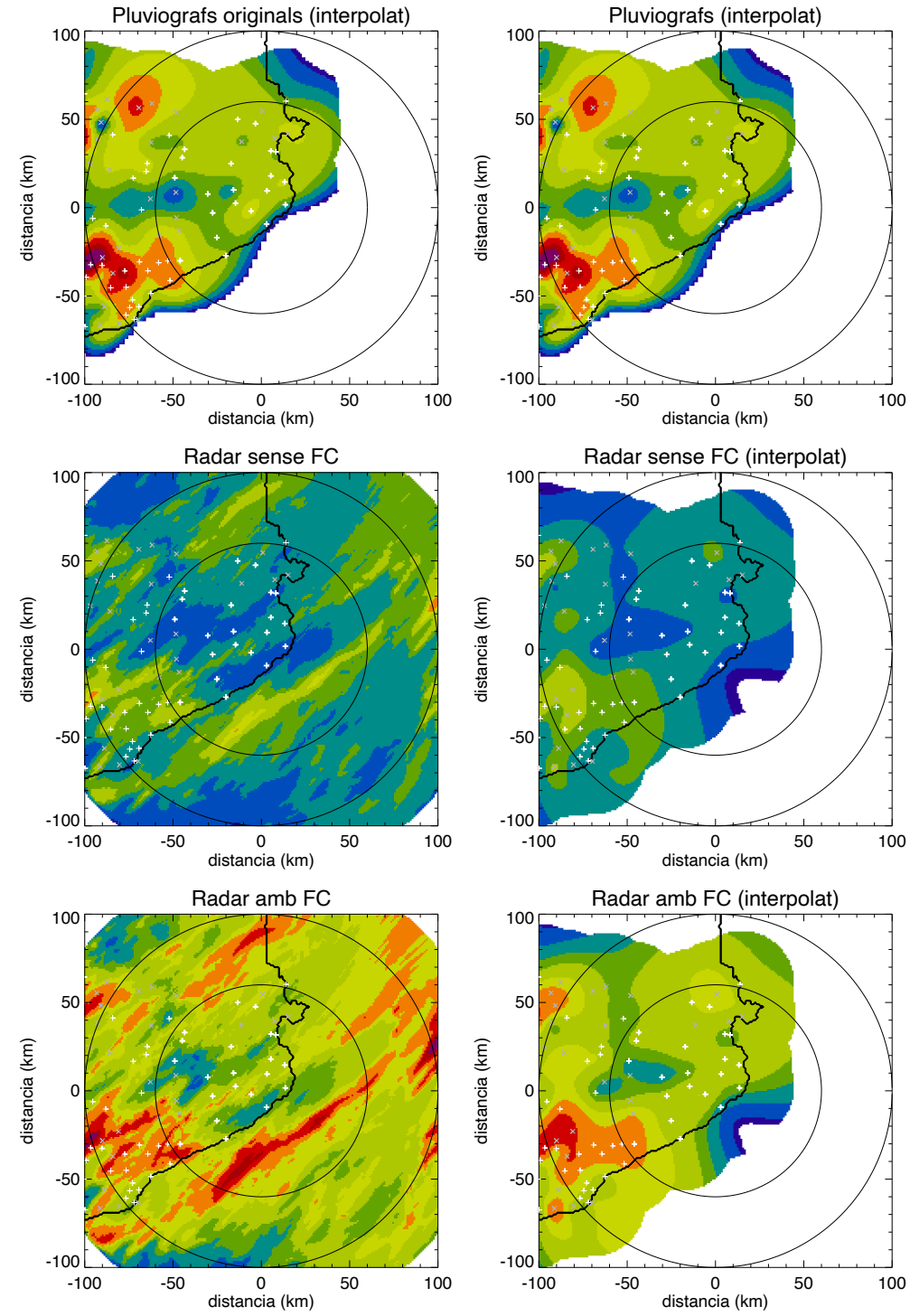


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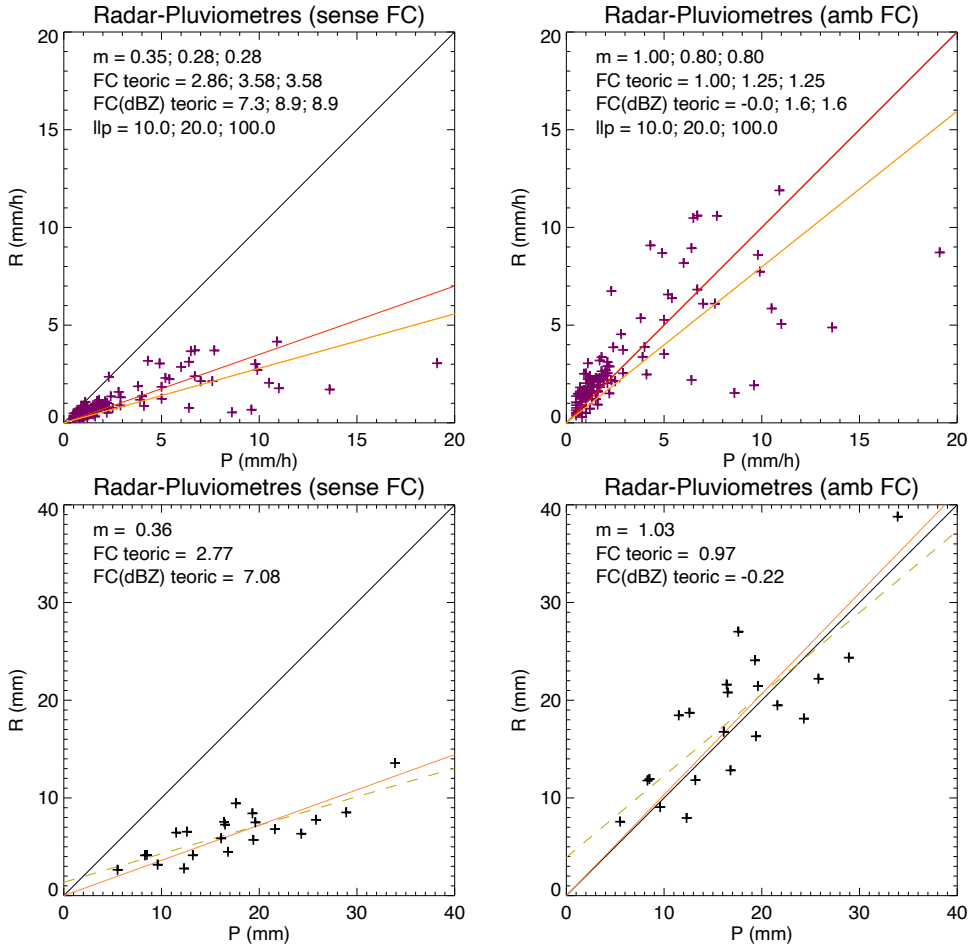


PDA: 20250921 – 20250921

lim= 200. fc aplicat= 2.86

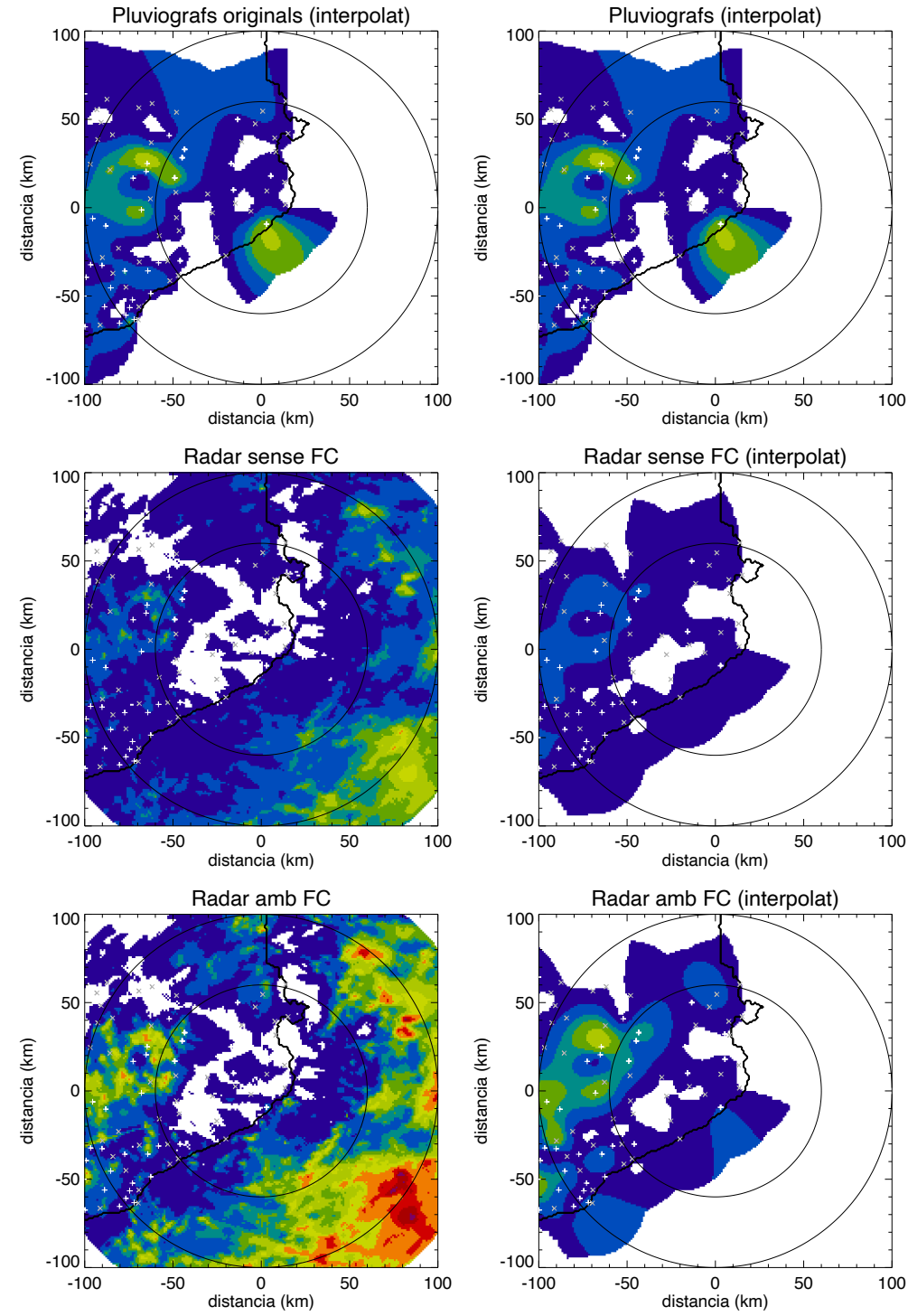


PDA: 20250921 – 20250921

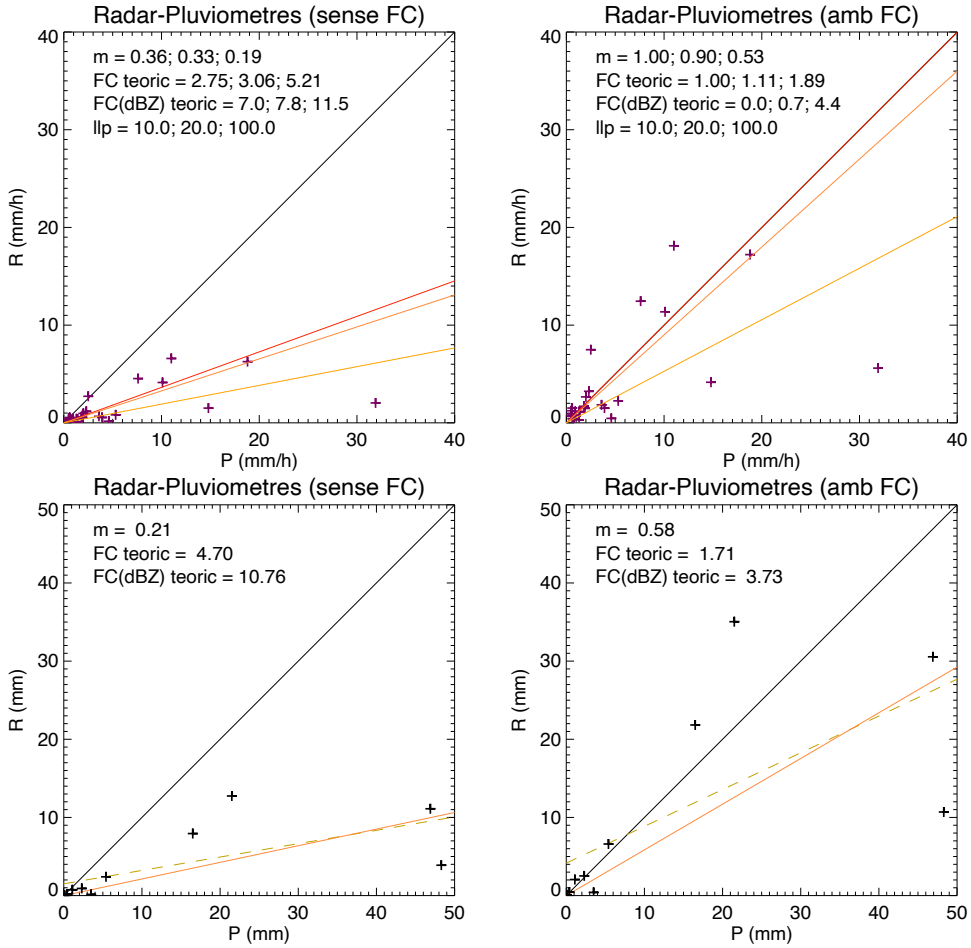


PDA: 20251011 – 20251016

lim= 350. fc aplicat= 2.75

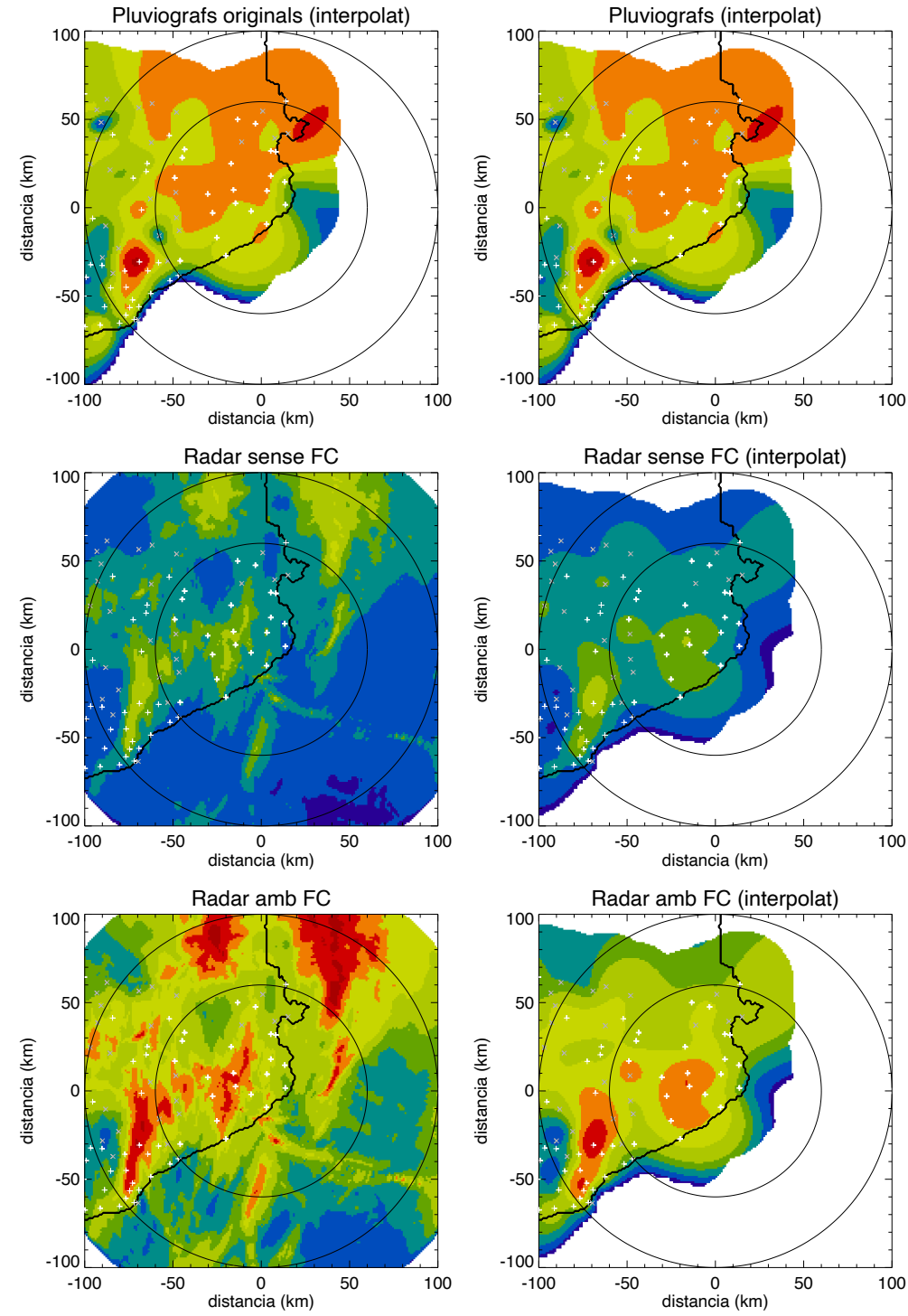


PDA: 20251011 – 20251016

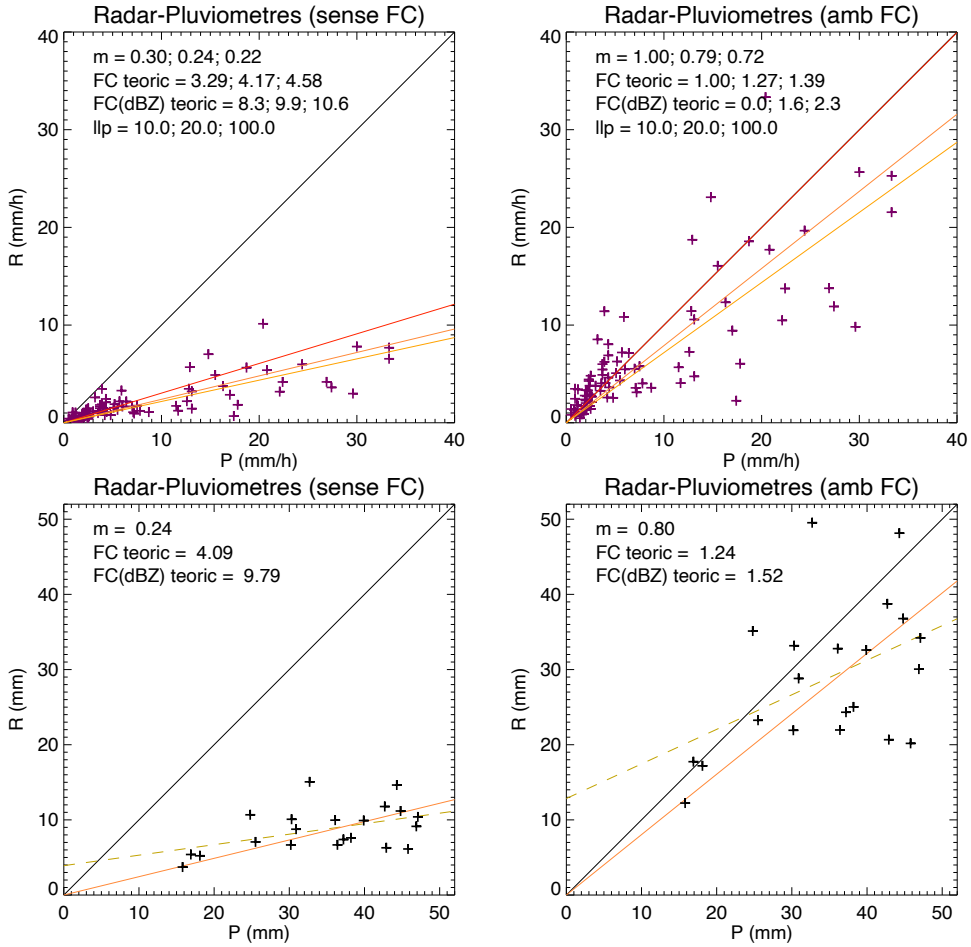


PDA: 20251106 – 20251106

lim= 200. fc aplicat= 3.29

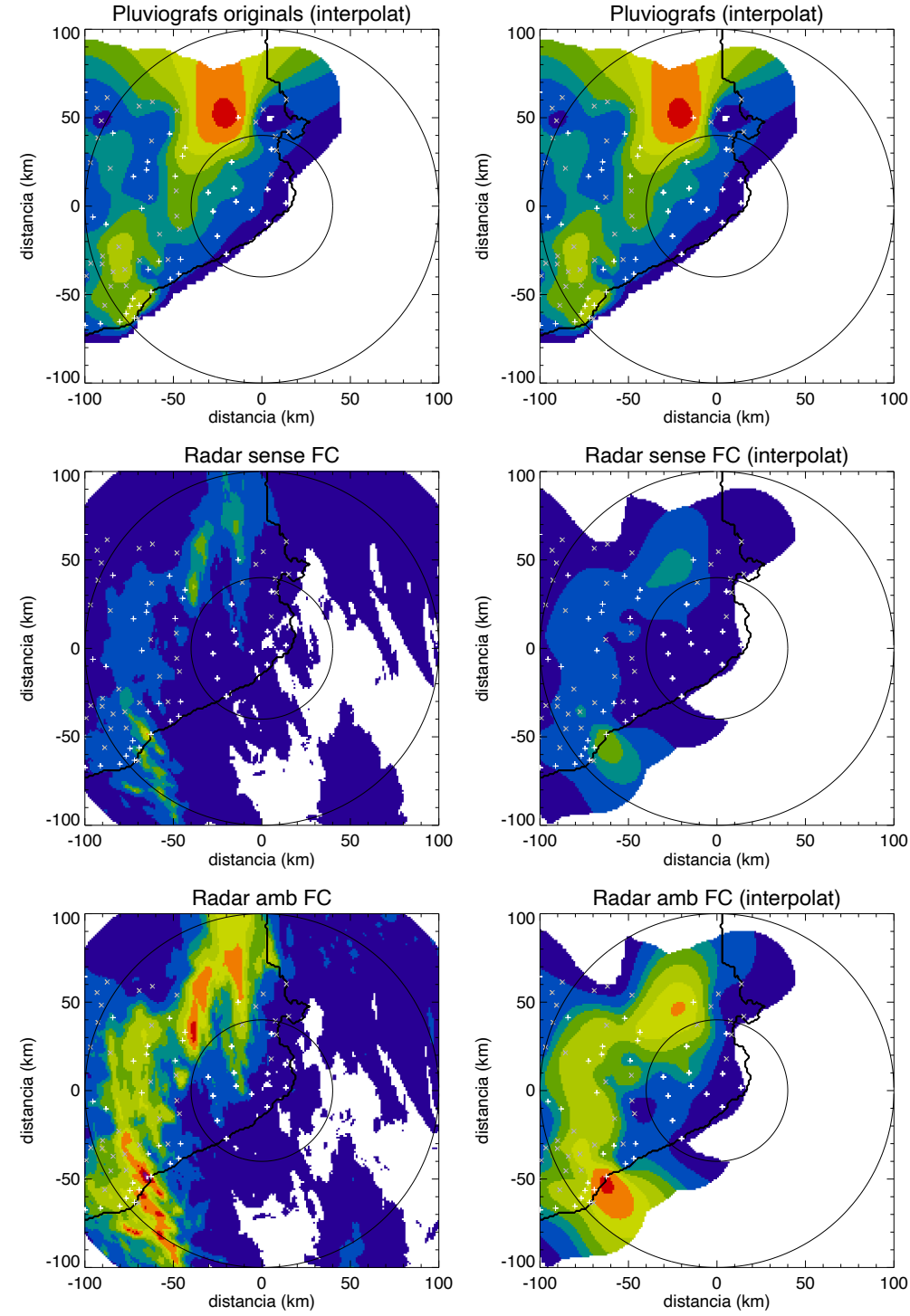


PDA: 20251106 – 20251106



PDA: 20251214 – 20251217

lim= 350. fc aplicat= 3.57



CDV: 20251214 – 20251217

