

## 6. Differences of elevation

### 6.1. Summary statistics of differences in elevation of DEMs compared to SRTM 30 m (10,000 points) – grouped by DEM

Table S.24. Summary statistics of differences in elevation - SRTM 30m - TanDEM-X 12m

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
Araca	-145.83	288.17	434.00	1.20	1.16	5.28	13.01	980.14	-0.96	3.32
Barcelos	-60.53	25.84	86.37	0.55	0.71	3.89	-2.59	27.72	-1.29	2.61
Pantanal	-20.02	22.54	42.55	3.38	3.43	2.29	-0.17	3.76	2.03	4.78
Iporanga	-70.03	51.58	121.60	2.29	2.30	7.66	0.07	2.61	-2.17	6.51
RioClaro	-37.28	57.05	94.32	4.84	4.88	3.71	-0.02	19.53	3.27	6.50
SantaCatarina	-66.32	46.60	112.92	0.41	1.15	7.60	-0.49	3.15	-3.36	4.45
SerraMar	-74.02	74.86	148.88	0.24	0.54	9.02	-0.21	3.21	-4.81	5.45

Table S.25. Summary statistics of differences in elevation - SRTM 30m - TanDEM-X 30m

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
Araca	-158.63	303.41	462.04	1.19	1.19	5.11	17.09	1369.19	-0.83	3.14
Barcelos	-56.12	29.73	85.85	0.58	0.69	3.48	-2.64	29.14	-1.06	2.41
Pantanal	-8.21	20.38	28.59	3.39	3.41	2.00	0.12	1.57	2.13	4.64
Iporanga	-65.37	43.36	108.72	2.35	2.36	6.15	0.12	4.18	-1.06	5.58
RioClaro	-27.29	46.17	73.46	4.87	4.92	3.26	-0.04	17.68	3.48	6.30
SantaCatarina	-56.05	46.80	102.84	0.53	0.94	5.01	-0.56	7.28	-1.95	3.31
SerraMar	-62.22	69.45	131.67	0.25	0.49	5.50	-0.05	10.49	-2.55	3.21

Table S.26. Summary statistics of differences in elevation - SRTM 30m - ASTER GDEM 30m

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
Araca	-1548.00	71.00	1619.00	4.36	5.00	23.43	-43.07	2531.54	-1.00	11.00
Barcelos	-76.00	37.00	113.00	-1.72	-1.00	8.81	-0.91	3.94	-6.00	4.00
Pantanal	-57.00	26.00	83.00	0.33	0.00	4.43	-0.15	3.55	-3.00	3.00
Iporanga	-74.00	76.00	150.00	3.90	3.50	8.95	0.18	3.49	-1.00	9.00
RioClaro	-46.00	42.00	88.00	1.20	1.00	7.27	0.26	1.40	-3.00	5.00
SantaCatarina	-38.00	47.00	85.00	1.79	2.00	8.36	0.12	0.66	-4.00	7.00
SerraMar	-58.00	96.00	154.00	4.87	4.00	10.53	0.43	2.31	-2.00	11.00

Table S.27. Summary statistics of differences in elevation - SRTM 30m - ALOS AW3D30

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
Araca	-117.00	43.00	160.00	0.20	-0.00	3.80	-4.89	149.13	-2.00	2.00
Barcelos	-64.00	37.00	101.00	-0.24	0.00	3.48	-1.01	32.86	-2.00	2.00
Pantanal	-9.00	34.00	43.00	-0.21	0.00	2.33	0.38	5.12	-2.00	1.00
Iporanga	-312.00	105.00	417.00	-1.39	-1.00	13.83	-6.73	109.56	-6.00	4.00
RioClaro	-29.00	44.00	73.00	0.06	0.00	3.80	0.12	8.81	-2.00	2.00
SantaCatarina	-120.00	132.00	252.00	-1.51	-1.00	6.64	0.52	39.63	-5.00	2.00
SerraMar	-129.00	54.00	183.00	-1.34	-1.00	7.91	-0.88	11.81	-6.00	3.00

## 6.2. Summary statistics of differences in elevation of DEMs compared to SRTM 30 m (10,000 points) – grouped by area

Table S.28. Aracá area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-145.83	288.17	434.00	1.20	1.16	5.28	13.01	980.14	-0.96	3.32
TanDEM-X 30m	-158.63	303.41	462.04	1.19	1.19	5.11	17.09	1369.19	-0.83	3.14
ASTER GDEM 30m	-1548.00	71.00	1619.00	4.36	5.00	23.43	-43.07	2531.54	-1.00	11.00
ALOS AW3D 30m	-117.00	43.00	160.00	0.20	-0.00	3.80	-4.89	149.13	-2.00	2.00

Table S.29. Barcelos area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-60.53	25.84	86.37	0.55	0.71	3.89	-2.59	27.72	-1.29	2.61
TanDEM-X 30m	-56.12	29.73	85.85	0.58	0.69	3.48	-2.64	29.14	-1.06	2.41
ASTER GDEM 30m	-76.00	37.00	113.00	-1.72	-1.00	8.81	-0.91	3.94	-6.00	4.00
ALOS AW3D 30m	-64.00	37.00	101.00	-0.24	0.00	3.48	-1.01	32.86	-2.00	2.00

Table S.30. Pantanal area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-20.02	22.54	42.55	3.38	3.43	2.29	-0.17	3.76	2.03	4.78
TanDEM-X 30m	-8.21	20.38	28.59	3.39	3.41	2.00	0.12	1.57	2.13	4.64
ASTER GDEM 30m	-57.00	26.00	83.00	0.33	0.00	4.43	-0.15	3.55	-3.00	3.00
ALOS AW3D 30m	-9.00	34.00	43.00	-0.21	0.00	2.33	0.38	5.12	-2.00	1.00

Table S.31. Iporanga area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-70.03	51.58	121.60	2.29	2.30	7.66	0.07	2.61	-2.17	6.51
TanDEM-X 30m	-65.37	43.36	108.72	2.35	2.36	6.15	0.12	4.18	-1.06	5.58
ASTER GDEM 30m	-74.00	76.00	150.00	3.90	3.50	8.95	0.18	3.49	-1.00	9.00
ALOS AW3D 30m	-312.00	105.00	417.00	-1.39	-1.00	13.83	-6.73	109.56	-6.00	4.00

Table S.32. Rio Claro area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-37.28	57.05	94.32	4.84	4.88	3.71	-0.02	19.53	3.27	6.50
TanDEM-X 30m	-27.29	46.17	73.46	4.87	4.92	3.26	-0.04	17.68	3.48	6.30
ASTER GDEM 30m	-46.00	42.00	88.00	1.20	1.00	7.27	0.26	1.40	-3.00	5.00
ALOS AW3D 30m	-29.00	44.00	73.00	0.06	0.00	3.80	0.12	8.81	-2.00	2.00

Table S.33. Santa Catarina area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-66.32	46.60	112.92	0.41	1.15	7.60	-0.49	3.15	-3.36	4.45
TanDEM-X 30m	-56.05	46.80	102.84	0.53	0.94	5.01	-0.56	7.28	-1.95	3.31
ASTER GDEM 30m	-38.00	47.00	85.00	1.79	2.00	8.36	0.12	0.66	-4.00	7.00
ALOS AW3D 30m	-120.00	132.00	252.00	-1.51	-1.00	6.64	0.52	39.63	-5.00	2.00

Table S.34. Serra do Mar area - summary statistics of differences in elevation: SRTM 30m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 12m	-74.02	74.86	148.88	0.24	0.54	9.02	-0.21	3.21	-4.81	5.45
TanDEM-X 30m	-62.22	69.45	131.67	0.25	0.49	5.50	-0.05	10.49	-2.55	3.21
ASTER GDEM 30m	-58.00	96.00	154.00	4.87	4.00	10.53	0.43	2.31	-2.00	11.00
ALOS AW3D 30m	-129.00	54.00	183.00	-1.34	-1.00	7.91	-0.88	11.81	-6.00	3.00

### 6.3. Histograms of differences in elevation of DEMs compared to SRTM 30 m (10,000 points)

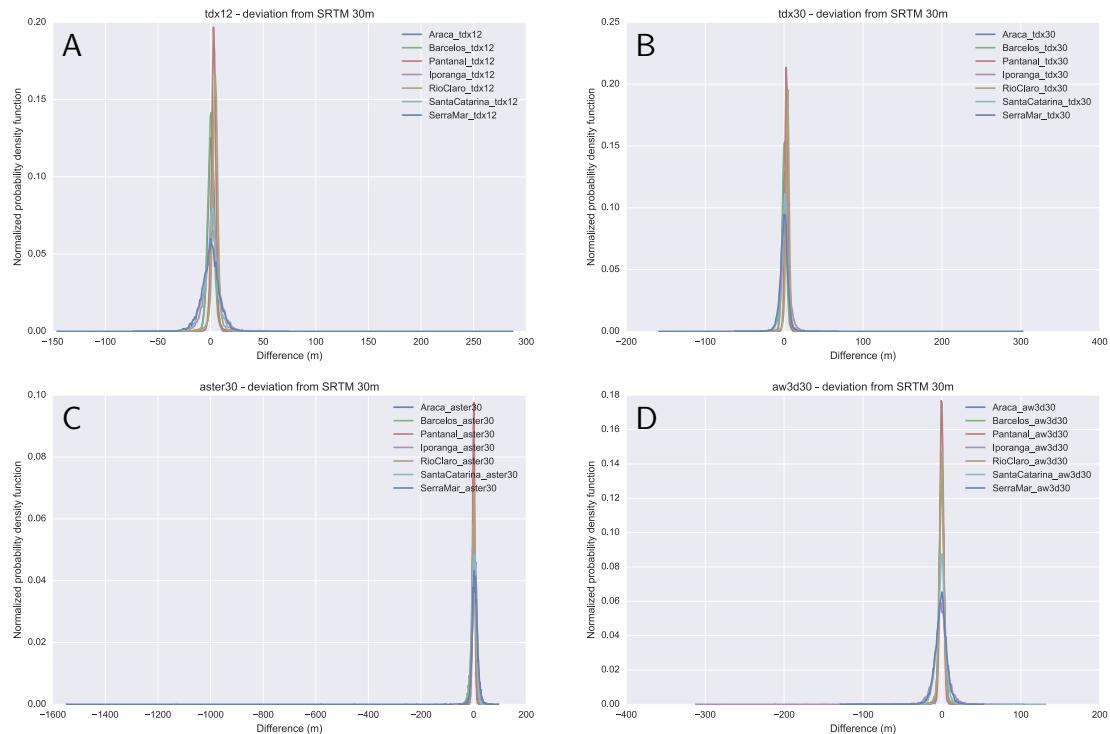


Figure S.6.1. Histograms of differences in elevation of DEMs compared to SRTM 30 m. A) TanDEM-X 12m; B) TanDEM-X 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

## 6.4. Maps of differences in elevation of DEMs compared to SRTM 30 m Aracá

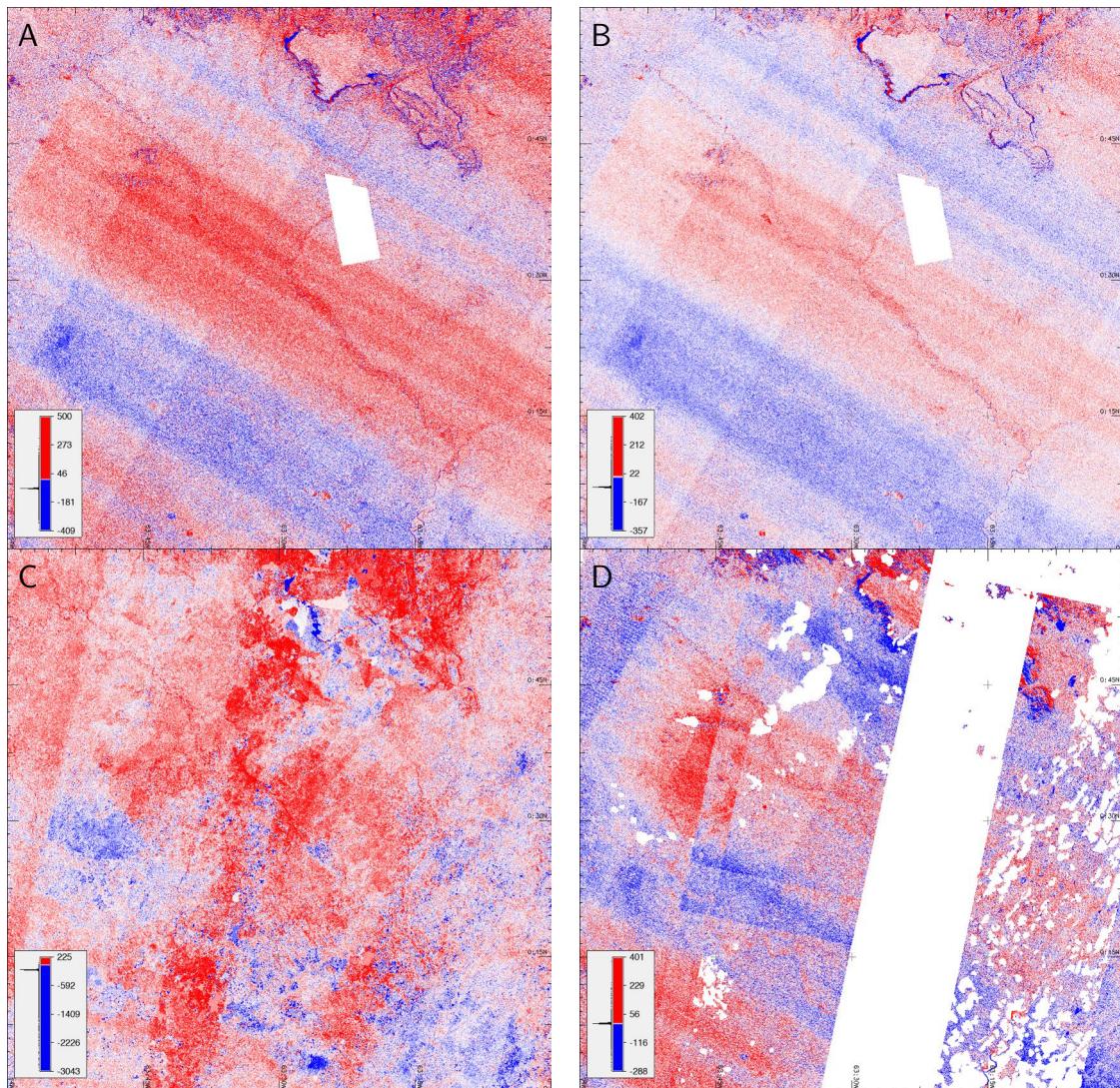


Figure S.6.2. Maps of differences in elevation about SRTM 30 m for Aracá area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Barcelos

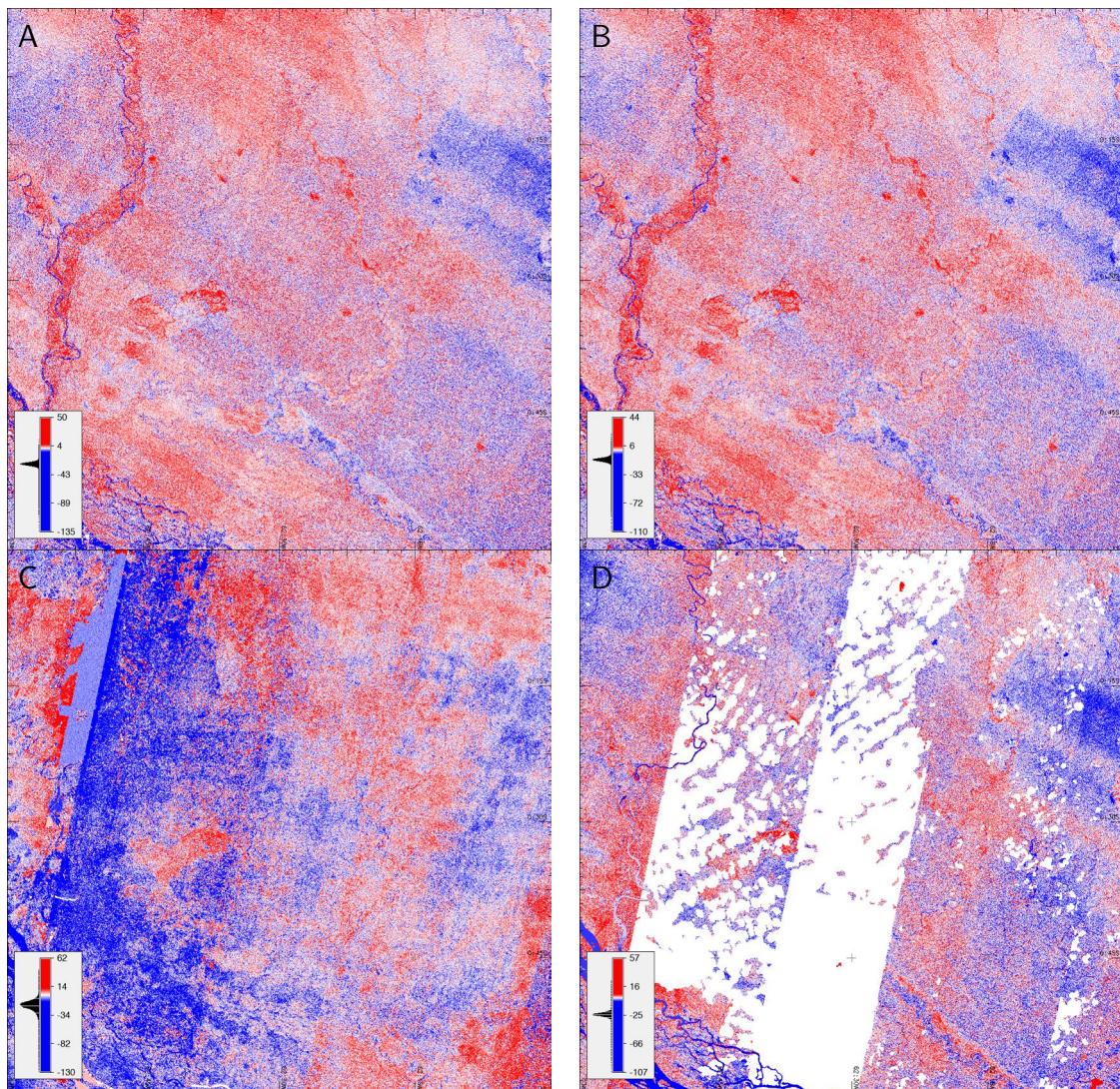


Figure S.6.3. Maps of differences in elevation about SRTM 30 m for Barcelos area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Pantanal

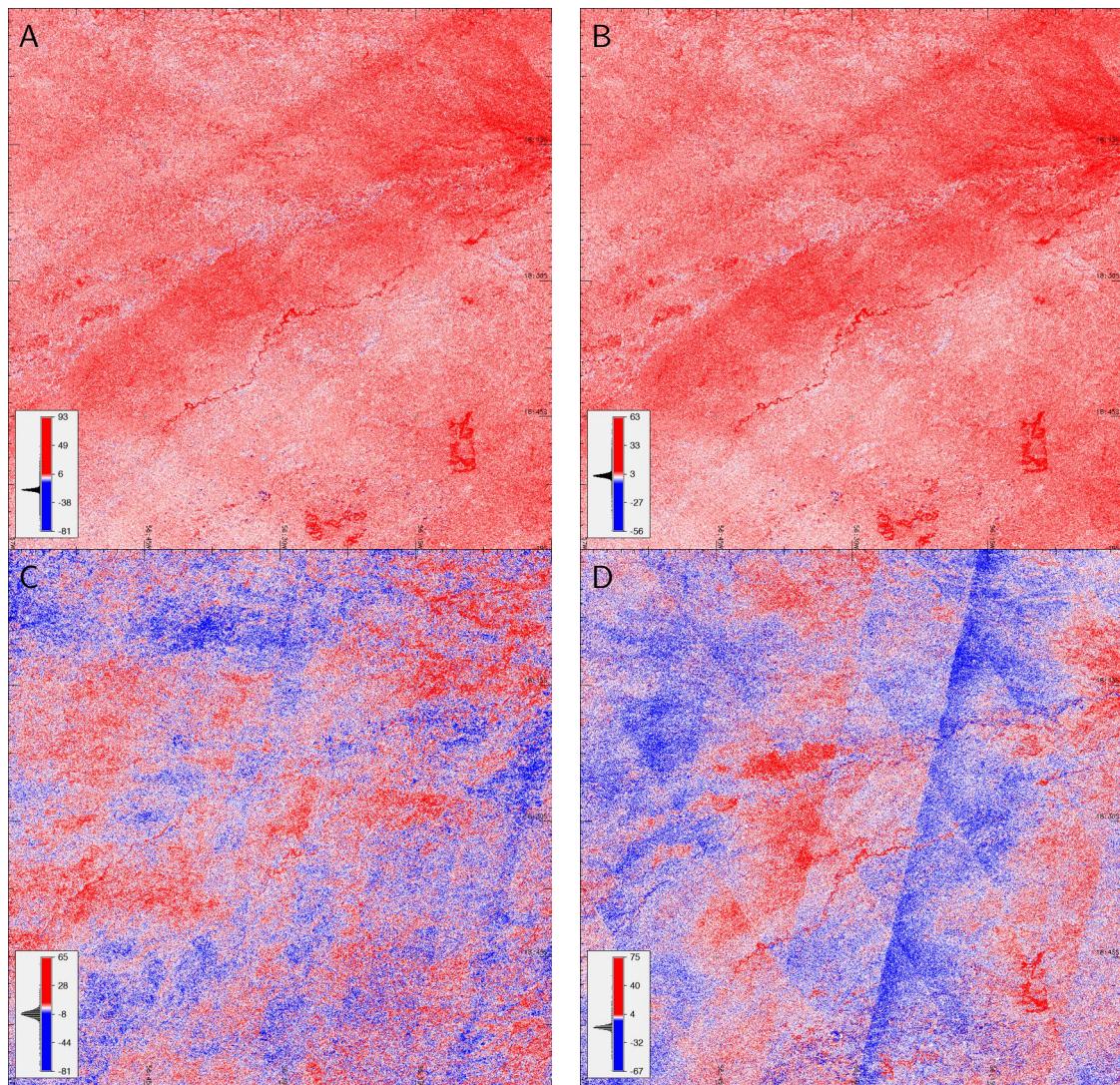


Figure S.6.4. Maps of differences in elevation about SRTM 30 m for Pantanal area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Iporanga

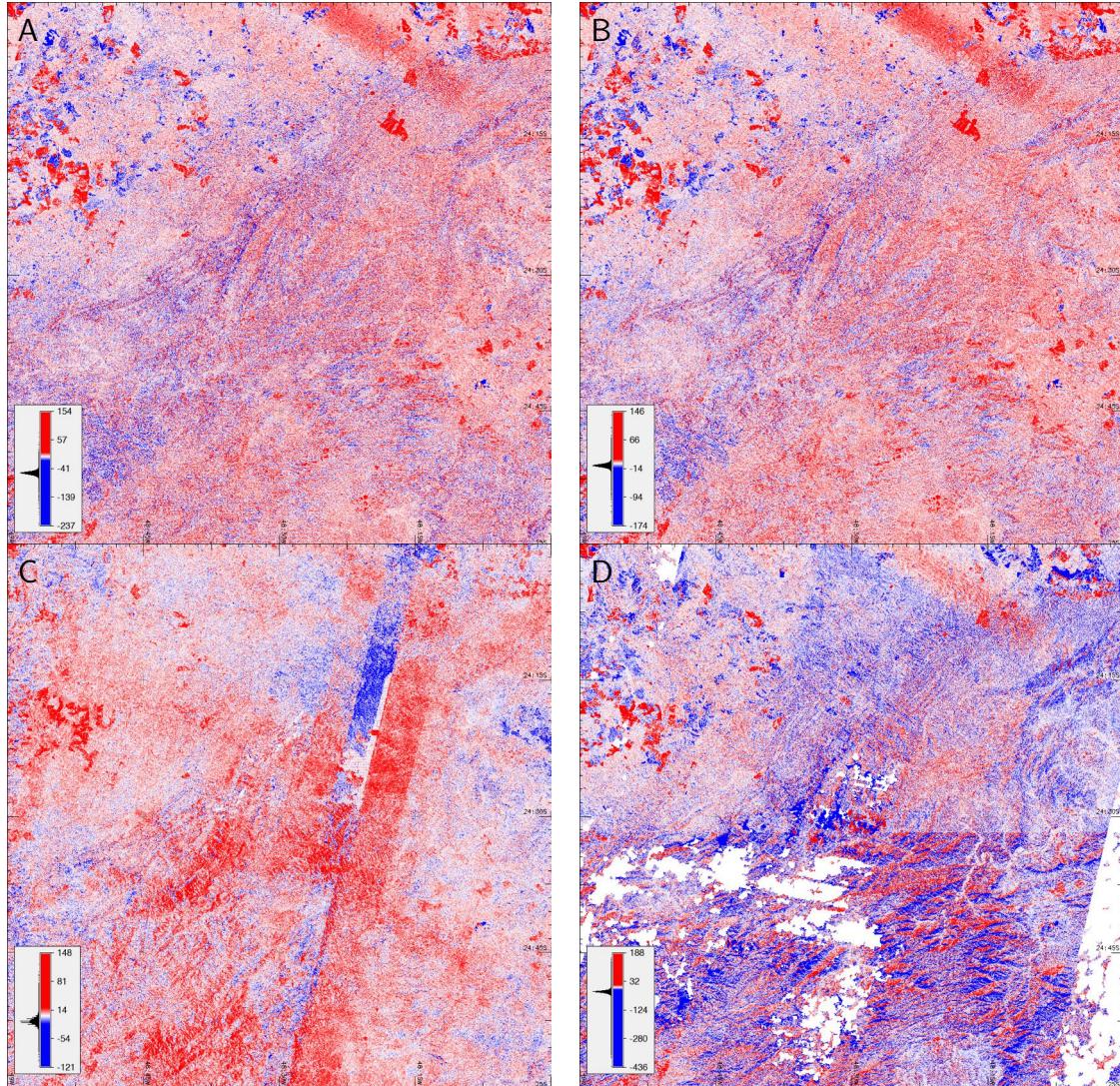


Figure S.6.5. Maps of differences in elevation about SRTM 30 m for Iporanga area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Rio Claro

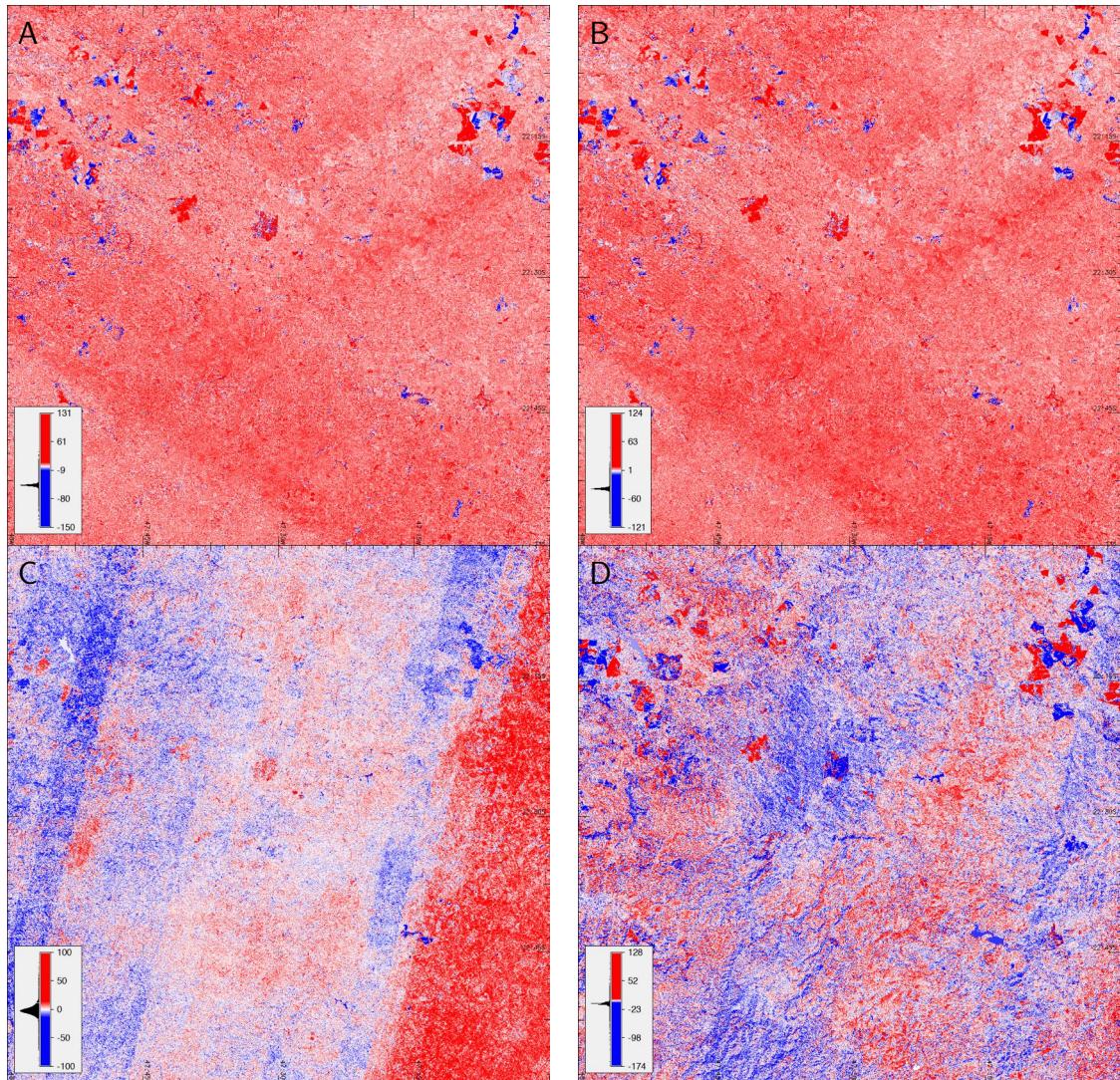


Figure S.6.6. Maps of differences in elevation about SRTM 30 m for RioClaro area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Santa Catarina

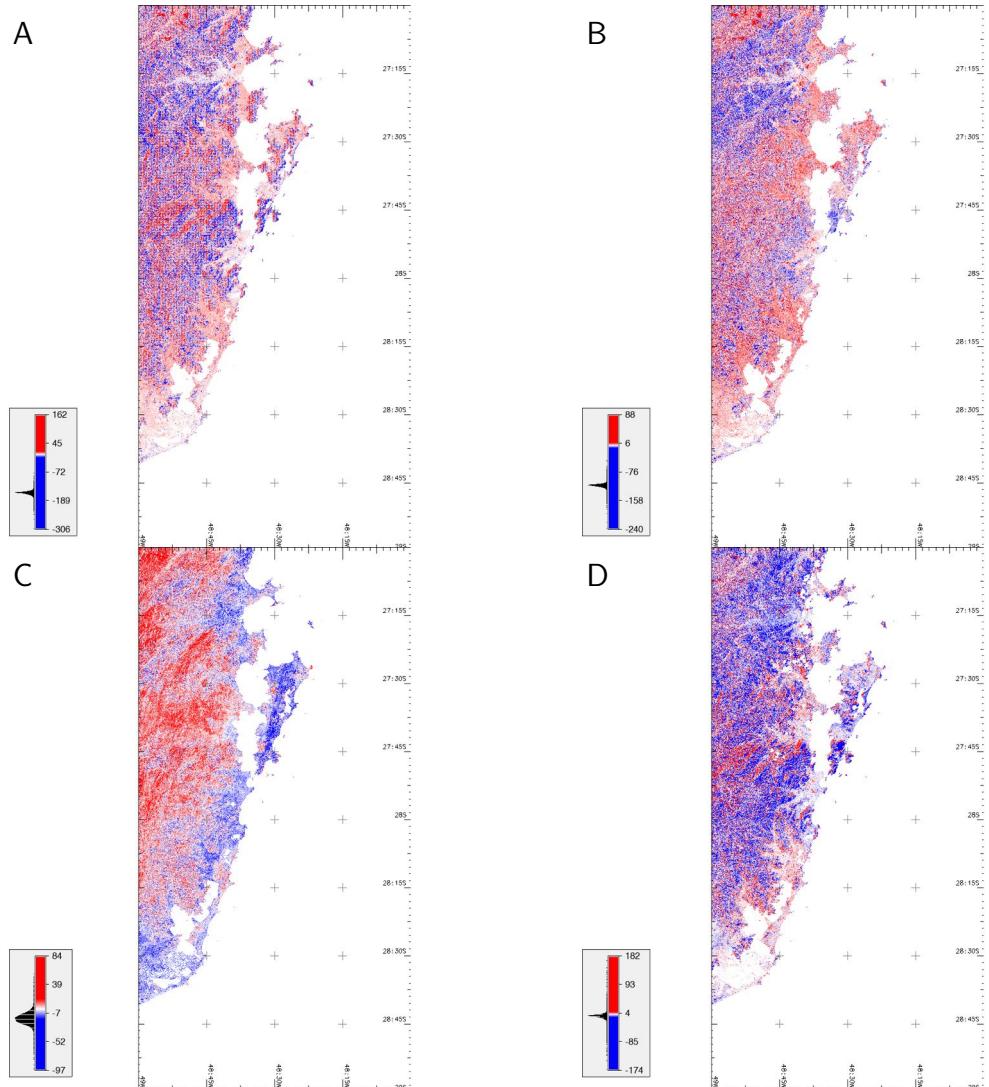


Figure S.6.7. Maps of differences in elevation about SRTM 30 m for SantaCatarina area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Serra do Mar

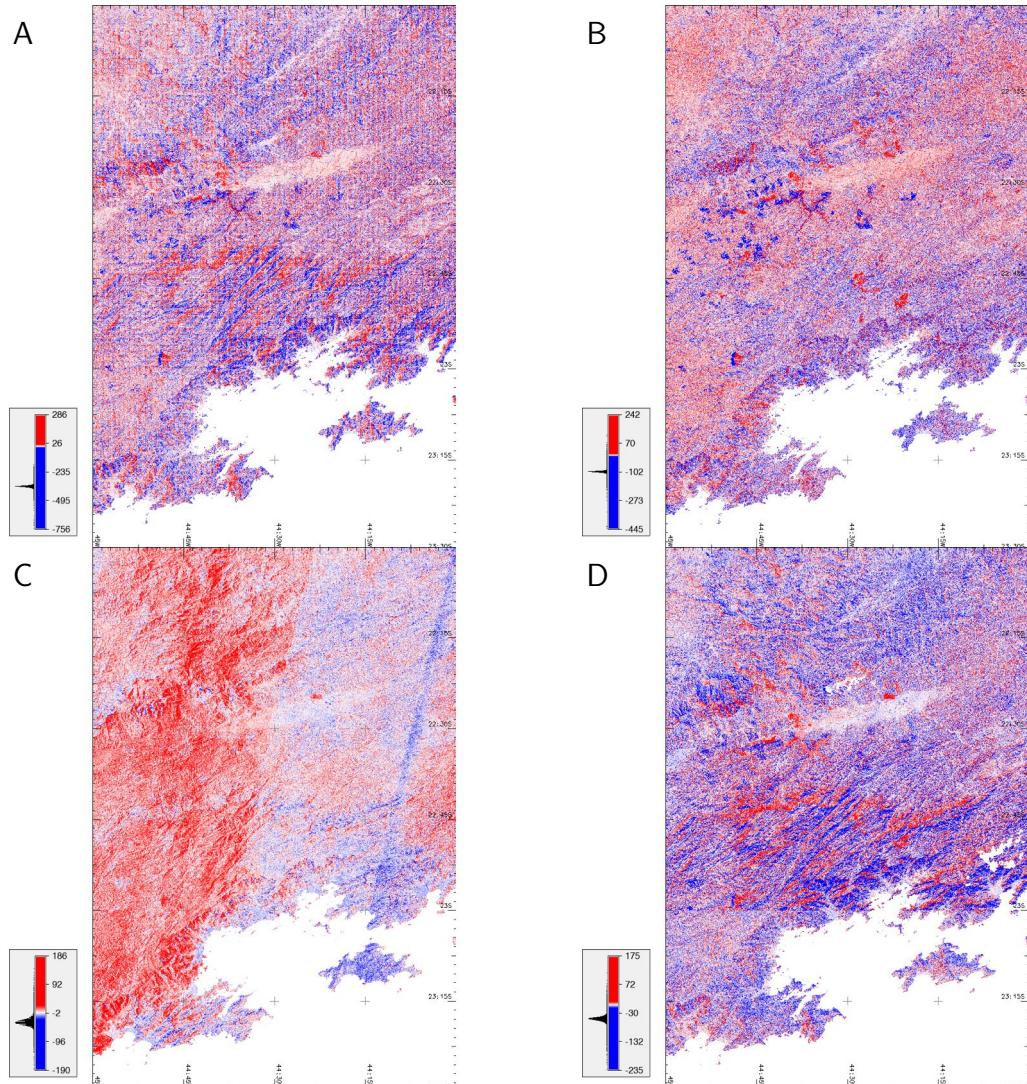


Figure S.6.8. Maps of differences in elevation about SRTM 30 m for SerraMar area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## 6.5. Histograms of differences in elevation of DEMs compared to SRTM 30 m - colorized according to the maps colorscales

### Aracá

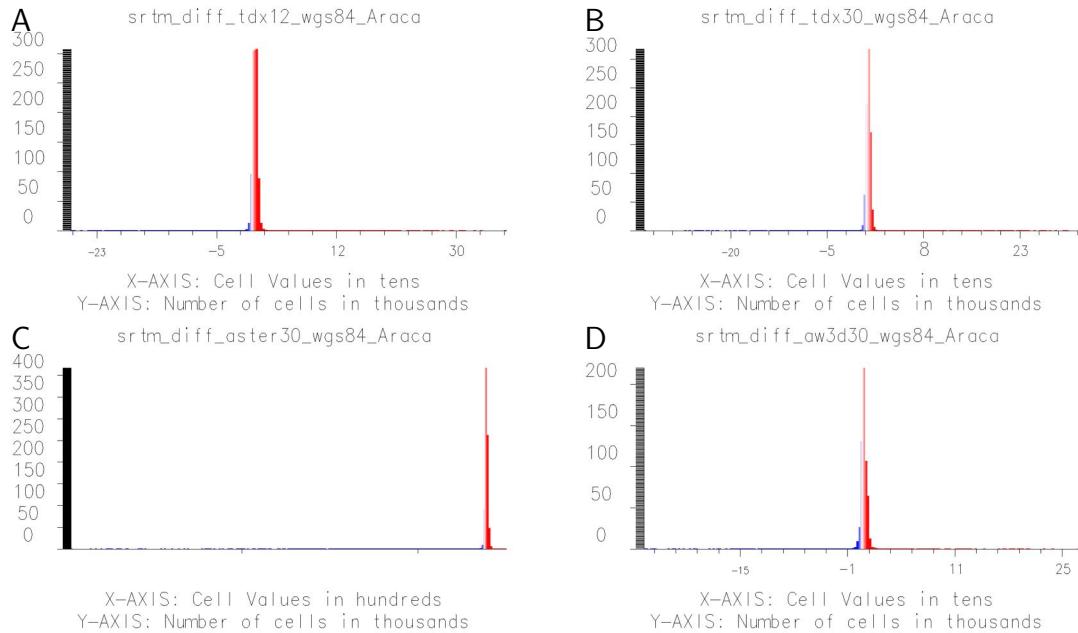


Figure S.6.9. Histograms of differences in elevation about SRTM 30 m for Aracá area, colorized according to the map colorscale. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

### Barcelos

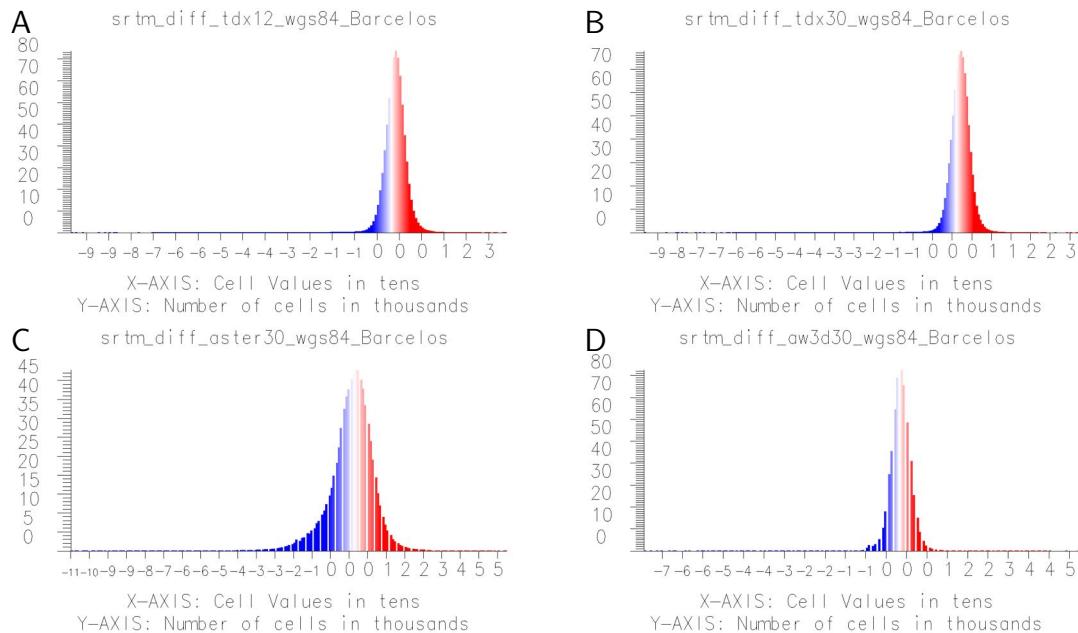


Figure S.6.10. Maps of differences in elevation about SRTM 30 m for Barcelos area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Pantanal

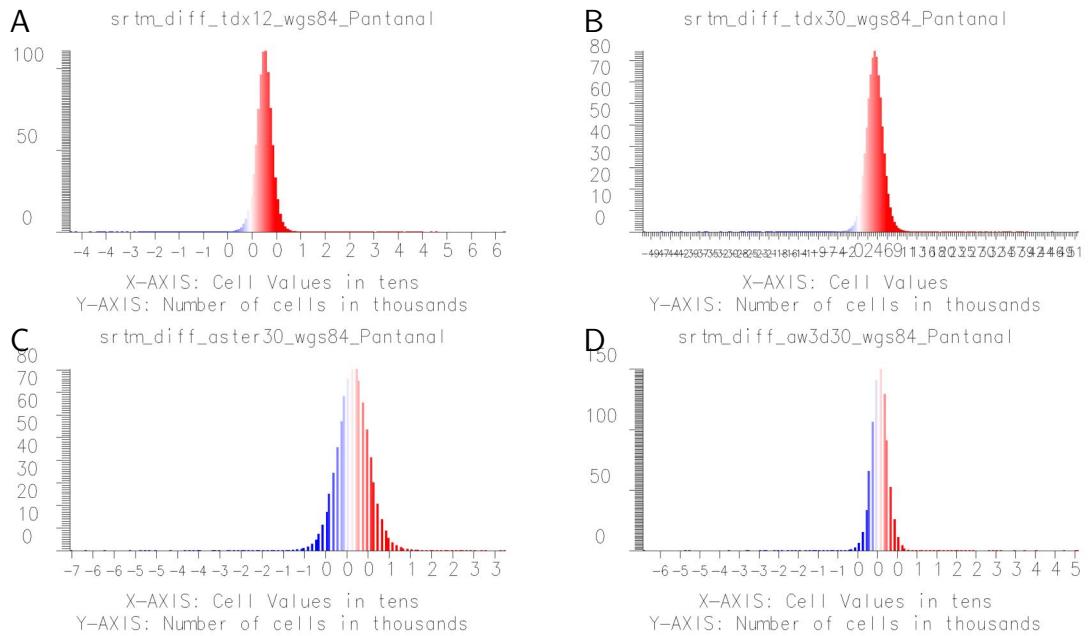


Figure S.6.11. Maps of differences in elevation about SRTM 30 m for Pantanal area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Iporanga

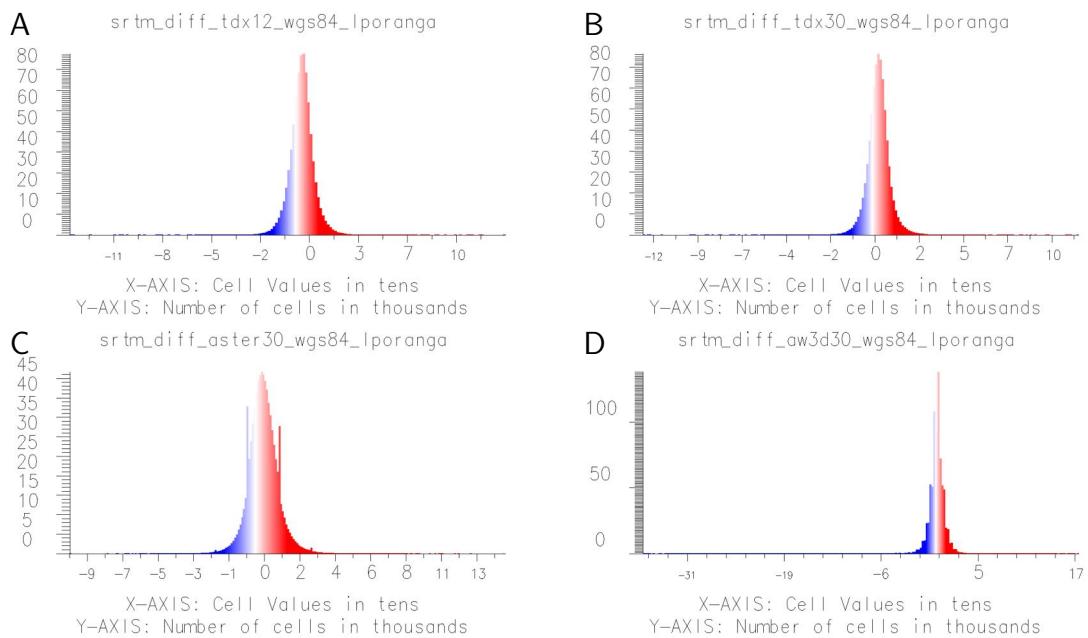


Figure S.6.12. Maps of differences in elevation about SRTM 30 m for Iporanga area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Rio Claro

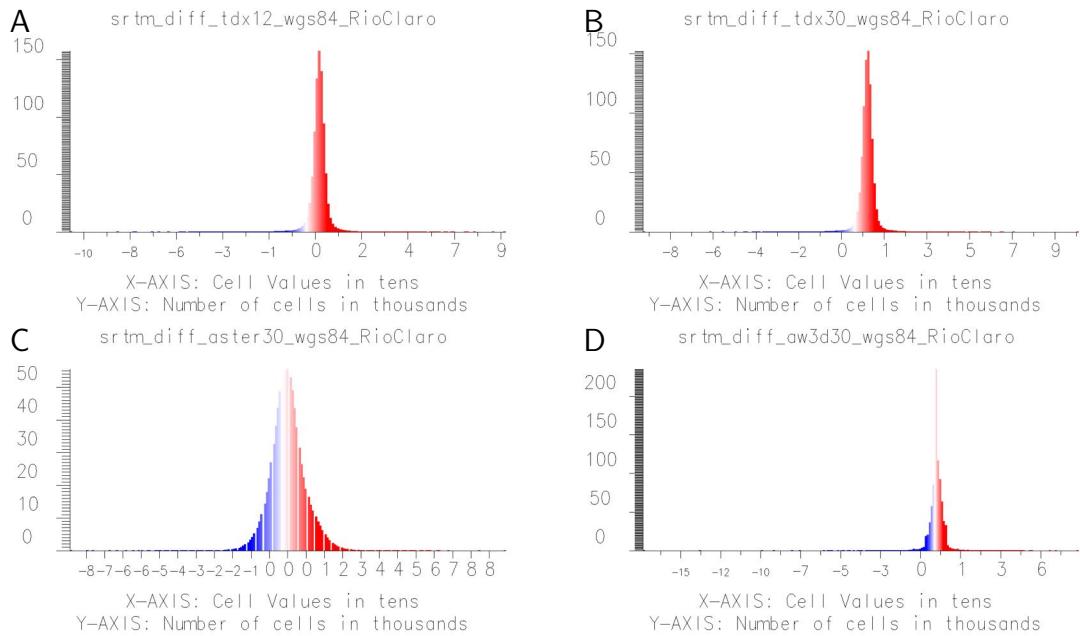


Figure S.6.13. Maps of differences in elevation about SRTM 30 m for RioClaro area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Santa Catarina

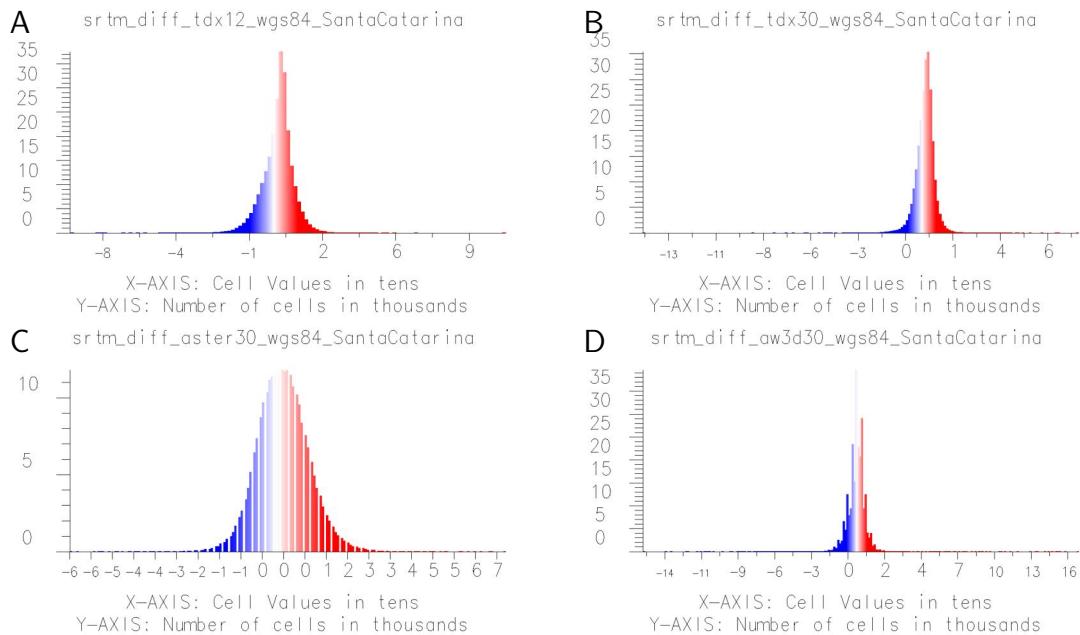


Figure S.6.14. Maps of differences in elevation about SRTM 30 m for SantaCatarina area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## Serra do Mar

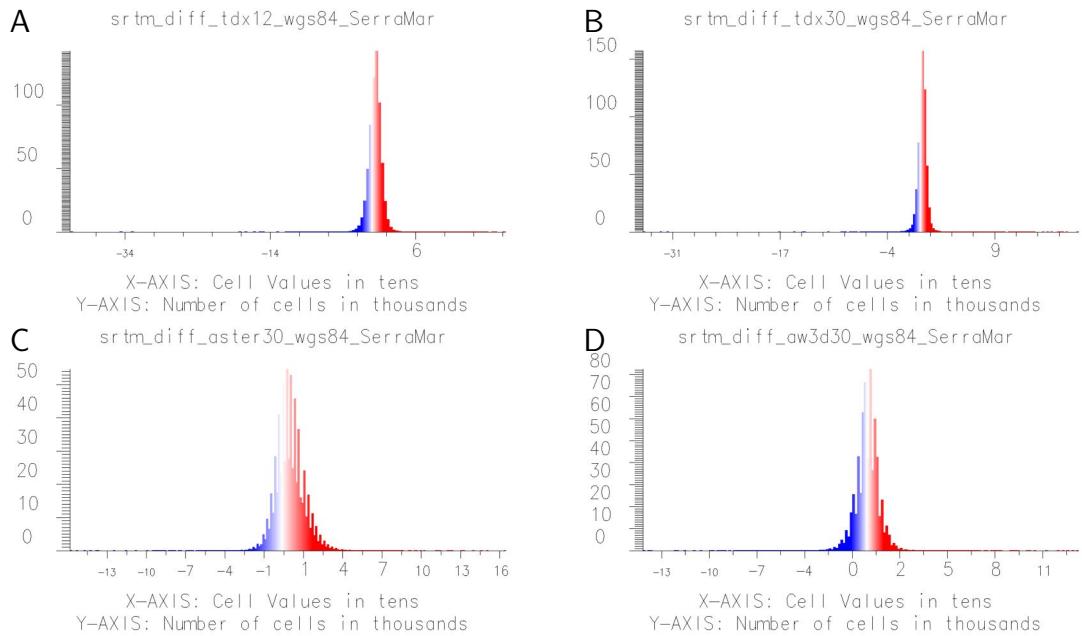


Figure S.6.15. Maps of differences in elevation about SRTM 30 m for SerraMar area. A) TanDEM-X, 12 m resolution; B) TanDEM-X, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

## 6.6. Scatterplots of elevation

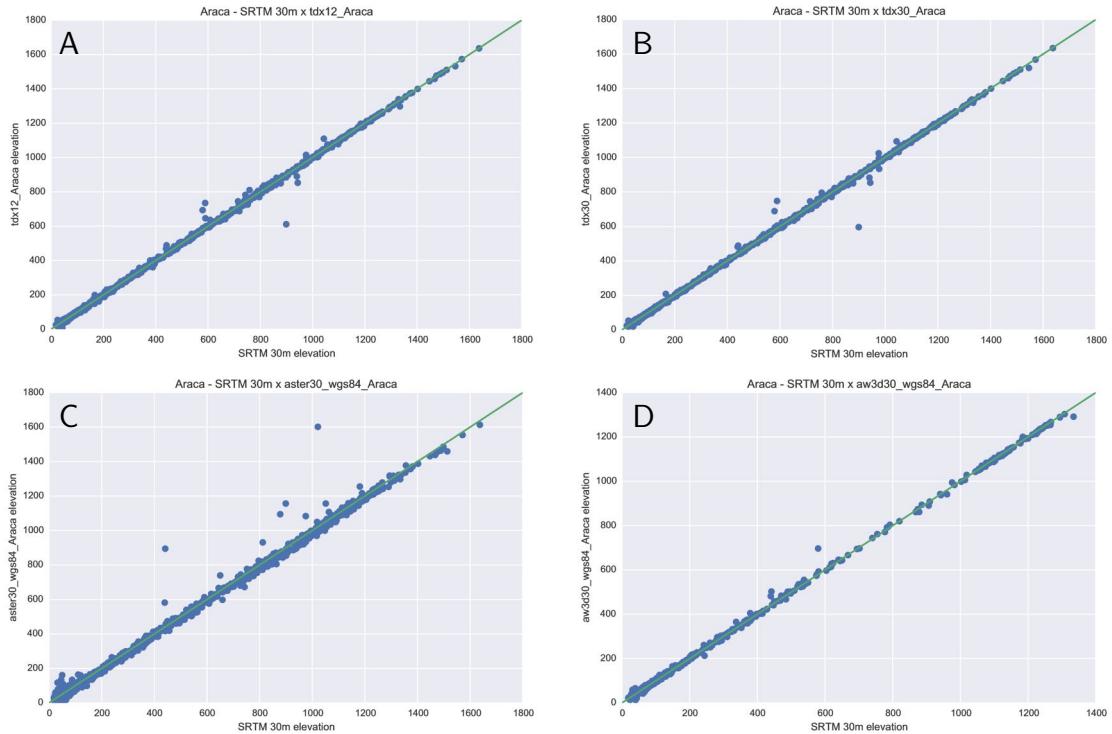


Figure S.6.16. Scatterplots of elevations for Aracá area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.

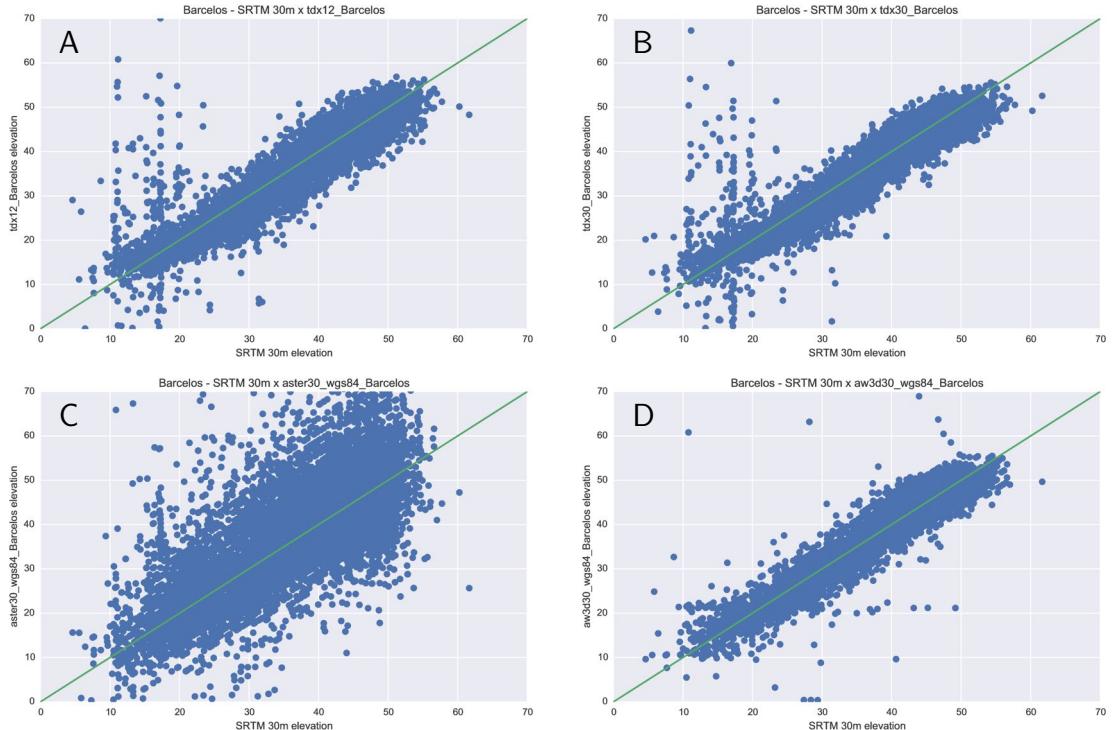


Figure S.6.17. Scatterplots of elevations for Barcelos area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.

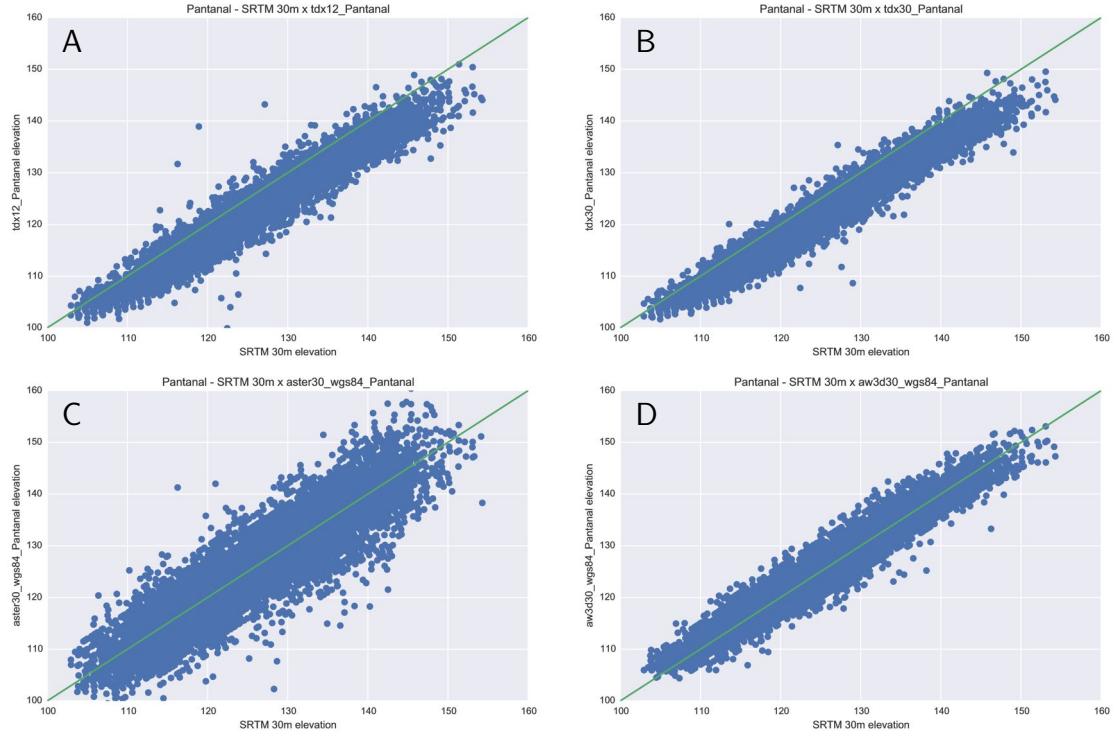


Figure S.6.18. Scatterplots of elevations for Pantanal area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.

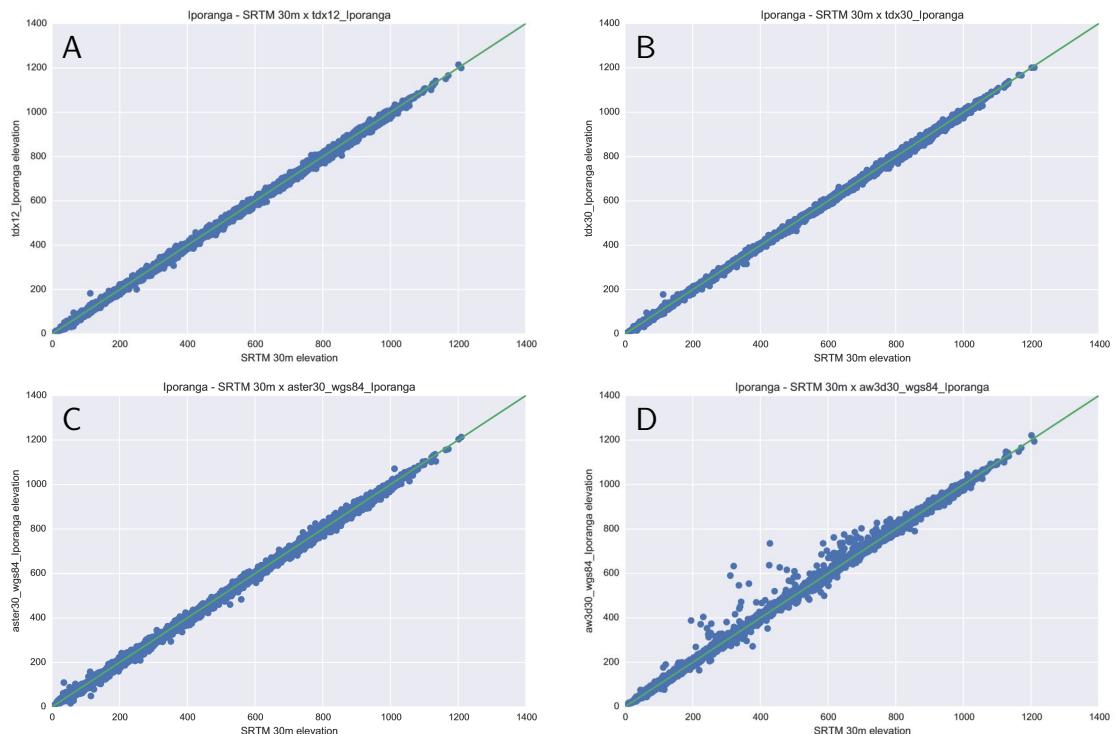


Figure S.6.19. Scatterplots of elevations for Iporanga area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.

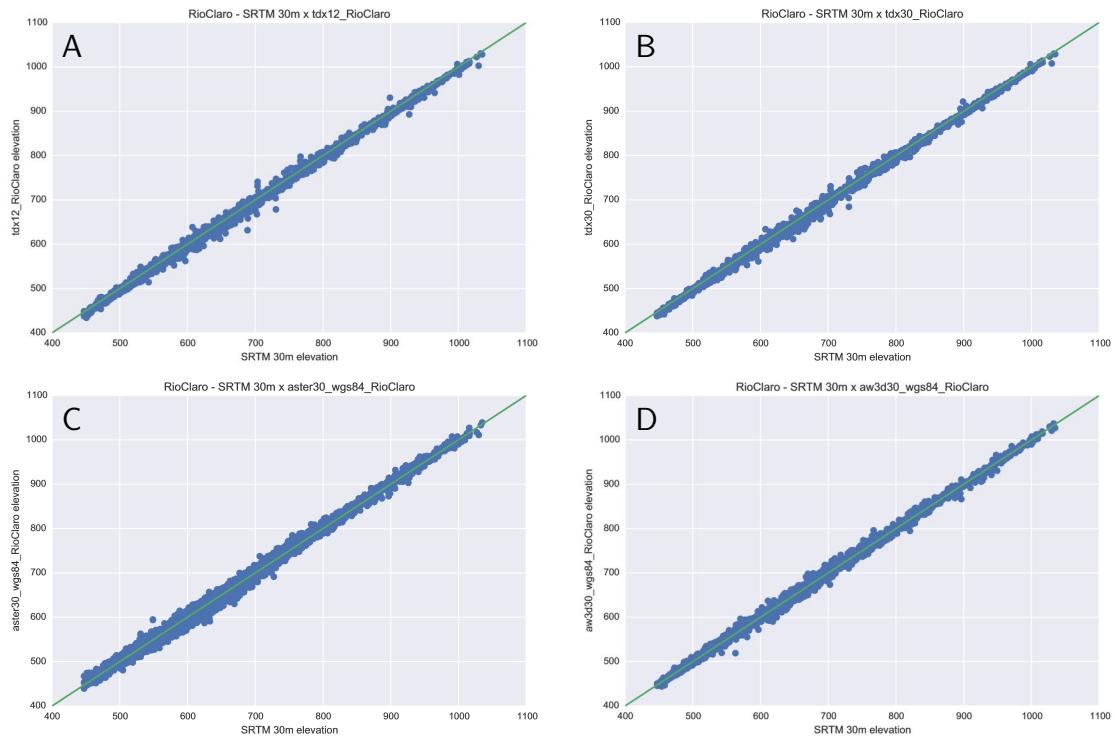


Figure S.6.20. Scatterplots of elevations for Rio Claro area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.

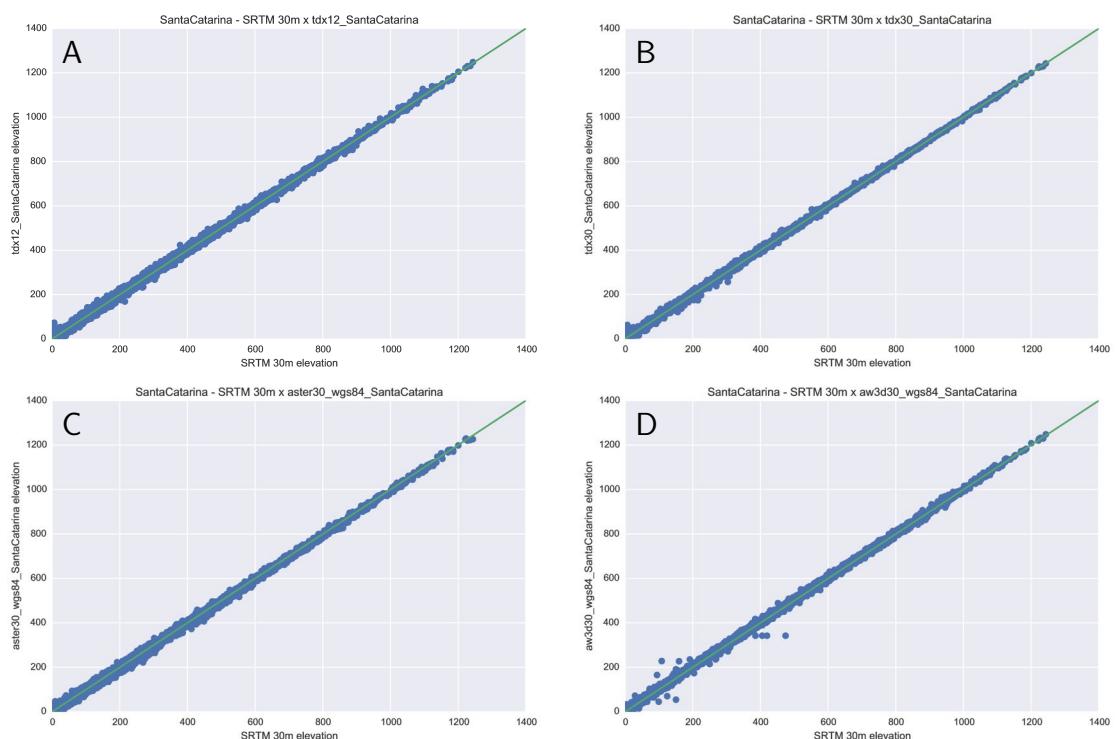


Figure S.6.21. Scatterplots of elevations for Santa Catarina area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.

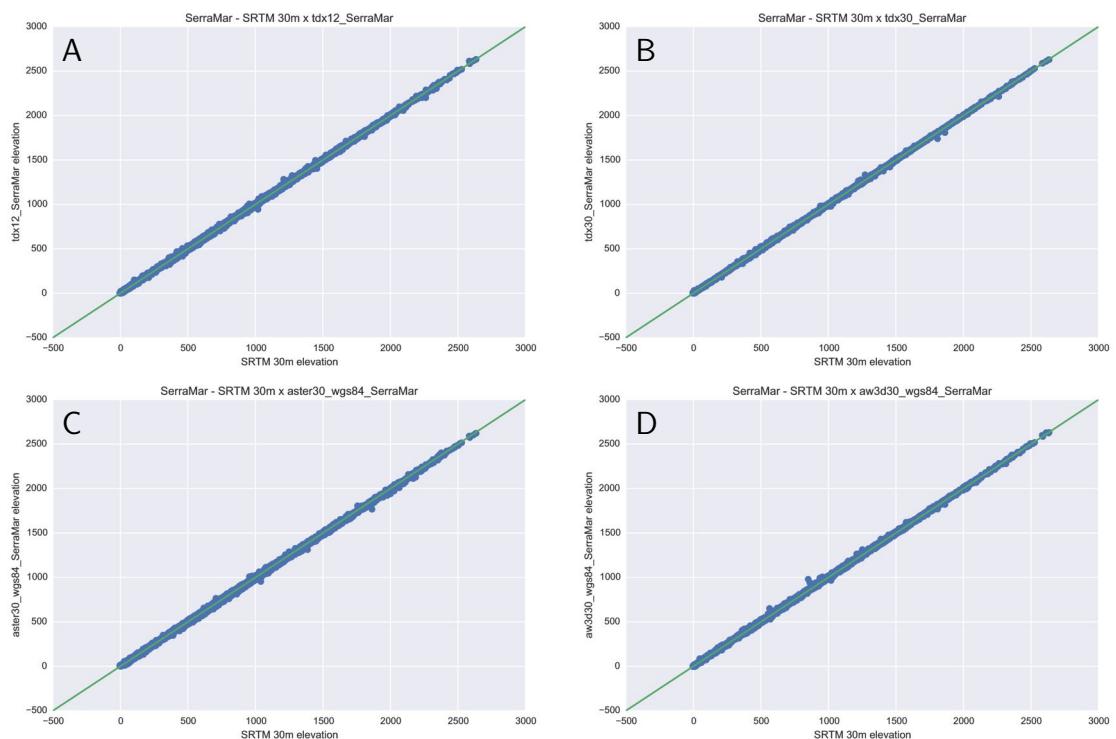


Figure S.6.22. Scatterplots of elevations for Serra do Mar area. A) SRTM 30m × TanDEM-X 12m; B) SRTM 30m × TanDEM-X 30m; C) SRTM 30m × ASTER GDEM 30m; D) SRTM 30m × ALOS AW3D 30m.