

6. Differences of elevation

6.1. Summary statistics of differences in elevation of DEMs compared to TanDEM-X 12m

Table S.16. Aracá area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m	-292.65	217.78	510.43	-0.00	-0.01	1.04	-0.51	1179.26	-0.41	0.41
SRTM 30m	-497.47	325.32	822.79	-1.20	-1.21	4.38	-2.48	749.16	-3.25	0.88
ASTER GDEM 30m	-3001.65	282.92	3284.57	3.35	3.56	20.67	-50.24	3870.04	-1.98	9.12
ALOS AW3D 30m	-361.93	237.48	599.41	-1.01	-1.08	2.67	-0.84	313.16	-2.54	0.50

Table S.17. Barcelos area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m	-30.47	48.42	78.88	0.00	-0.00	1.25	0.02	8.15	-0.61	0.62
SRTM 30m	-37.36	101.17	138.53	-0.73	-0.73	3.06	-0.05	2.57	-2.59	1.19
ASTER GDEM 30m	-126.47	104.73	231.19	-2.38	-1.41	8.75	-1.02	4.39	-6.62	3.01
ALOS AW3D 30m	-92.84	62.69	155.54	-0.58	-0.49	2.75	-0.73	32.11	-2.04	0.96

Table S.18. Pantanal area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m	-40.03	37.82	77.85	0.00	-0.04	0.84	0.65	20.65	-0.39	0.31
SRTM 30m	-91.32	64.61	155.93	-3.37	-3.41	2.20	0.09	5.98	-4.75	-2.04
ASTER GDEM 30m	-94.17	79.37	173.54	-3.09	-3.00	4.20	-0.04	1.29	-5.73	-0.38
ALOS AW3D 30m	-92.92	77.12	170.04	-3.56	-3.64	2.06	0.14	12.95	-4.87	-2.32

Table S.19. Iporanga area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m	-84.84	78.62	163.45	0.00	0.03	1.57	-0.28	18.02	-0.73	0.76
SRTM 30m	-154.16	149.58	303.74	-2.25	-2.24	6.47	-0.14	3.92	-5.81	1.44
ASTER GDEM 30m	-134.33	138.00	272.33	1.69	1.44	9.18	0.11	3.45	-3.61	6.83
ALOS AW3D 30m	-421.95	192.77	614.72	-3.55	-2.89	9.56	-8.64	189.93	-5.53	-0.34

Table S.20. Rio Claro area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats	min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m	-67.81	66.25	134.06	0.00	-0.00	1.03	0.38	67.02	-0.32	0.30
SRTM 30m	-127.70	93.31	221.01	-4.89	-4.96	3.44	0.03	16.19	-6.42	-3.45
ASTER GDEM 30m	-103.27	101.60	204.87	-3.74	-4.13	7.30	0.27	1.85	-8.08	0.13
ALOS AW3D 30m	-178.98	131.30	310.29	-4.86	-4.87	3.12	-1.26	46.38	-6.09	-3.66

Table S.21. Santa Catarina area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats		min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m		-150.34	134.84	285.17	0.09	0.03	5.81	0.10	1.59	-3.04	3.27
SRTM 30m		-165.87	139.50	305.37	-0.40	-1.18	7.06	0.45	2.52	-4.41	3.40
ASTER GDEM 30m		-140.12	149.17	289.29	1.23	0.01	11.12	0.46	0.90	-6.36	7.87
ALOS AW3D 30m		-166.91	189.05	355.96	-1.89	-2.05	5.11	0.86	72.10	-4.03	0.08

Table S.22. Serra do Mar area - summary statistics of differences in elevation: TanDEM-X 12m minus other DEMs

stats		min	max	range	mean	median	stddev	skew	kurt	p25	p75
TanDEM-X 30m		-263.10	214.30	477.39	-0.01	-0.03	7.16	0.07	2.61	-4.66	4.64
SRTM 30m		-287.16	248.76	535.92	-0.25	-0.61	8.30	-0.04	8.54	-5.21	4.61
ASTER GDEM 30m		-268.52	243.08	511.60	4.62	3.41	14.14	0.44	2.16	-4.61	12.83
ALOS AW3D 30m		-262.58	203.54	466.12	-1.59	-1.72	5.19	-1.04	50.67	-4.13	0.84

6.2. Maps of differences in elevation of DEMs compared to TanDEM-X 12m Aracá

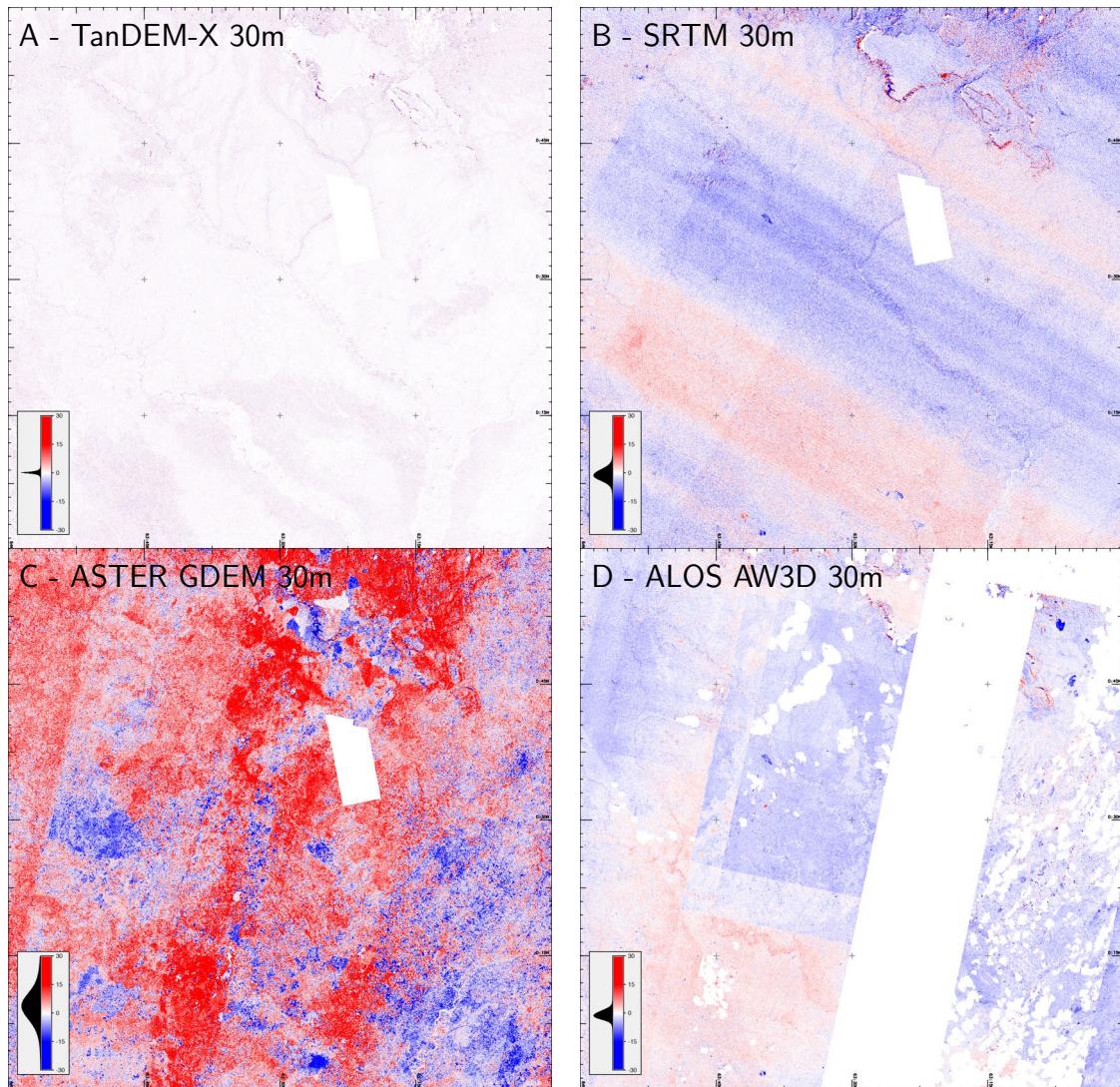


Figure S.6.1. Maps of differences in elevation about TanDEM-X 12 m for Aracá area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Barcelos

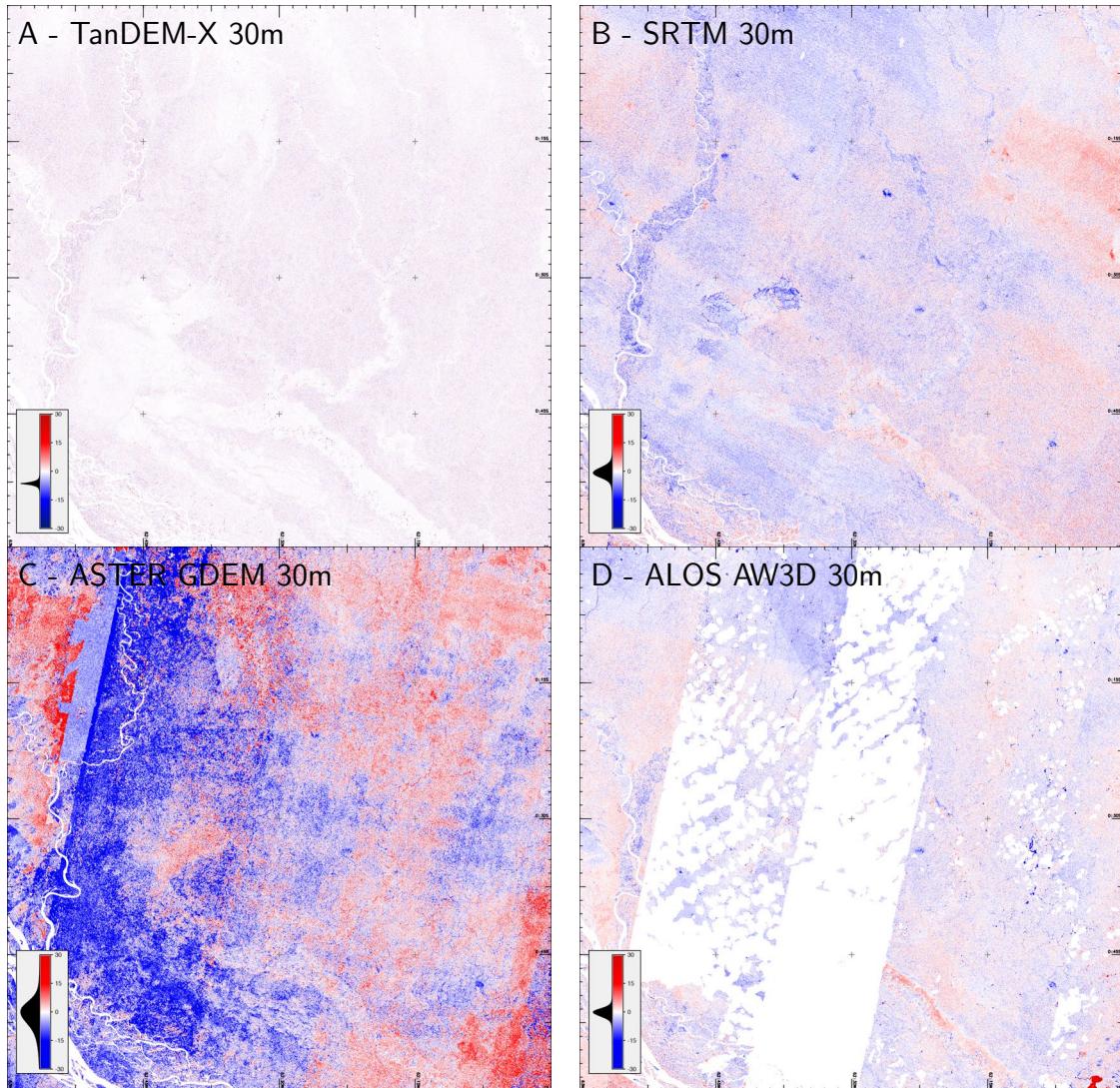


Figure S.6.2. Maps of differences in elevation about TanDEM-X 12 m for Barcelos area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Pantanal

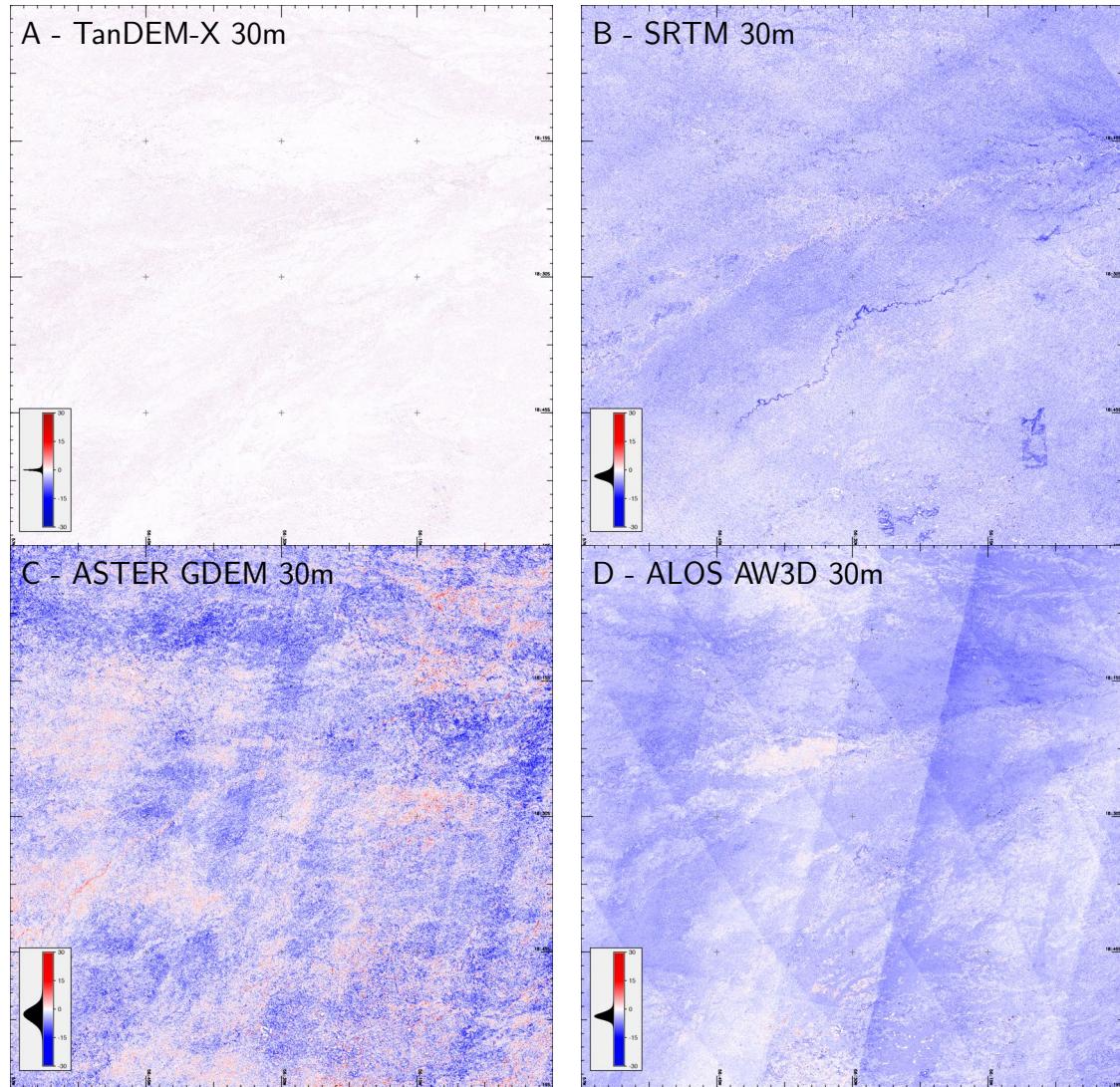


Figure S.6.3. Maps of differences in elevation about TanDEM-X 12 m for Pantanal area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Iporanga

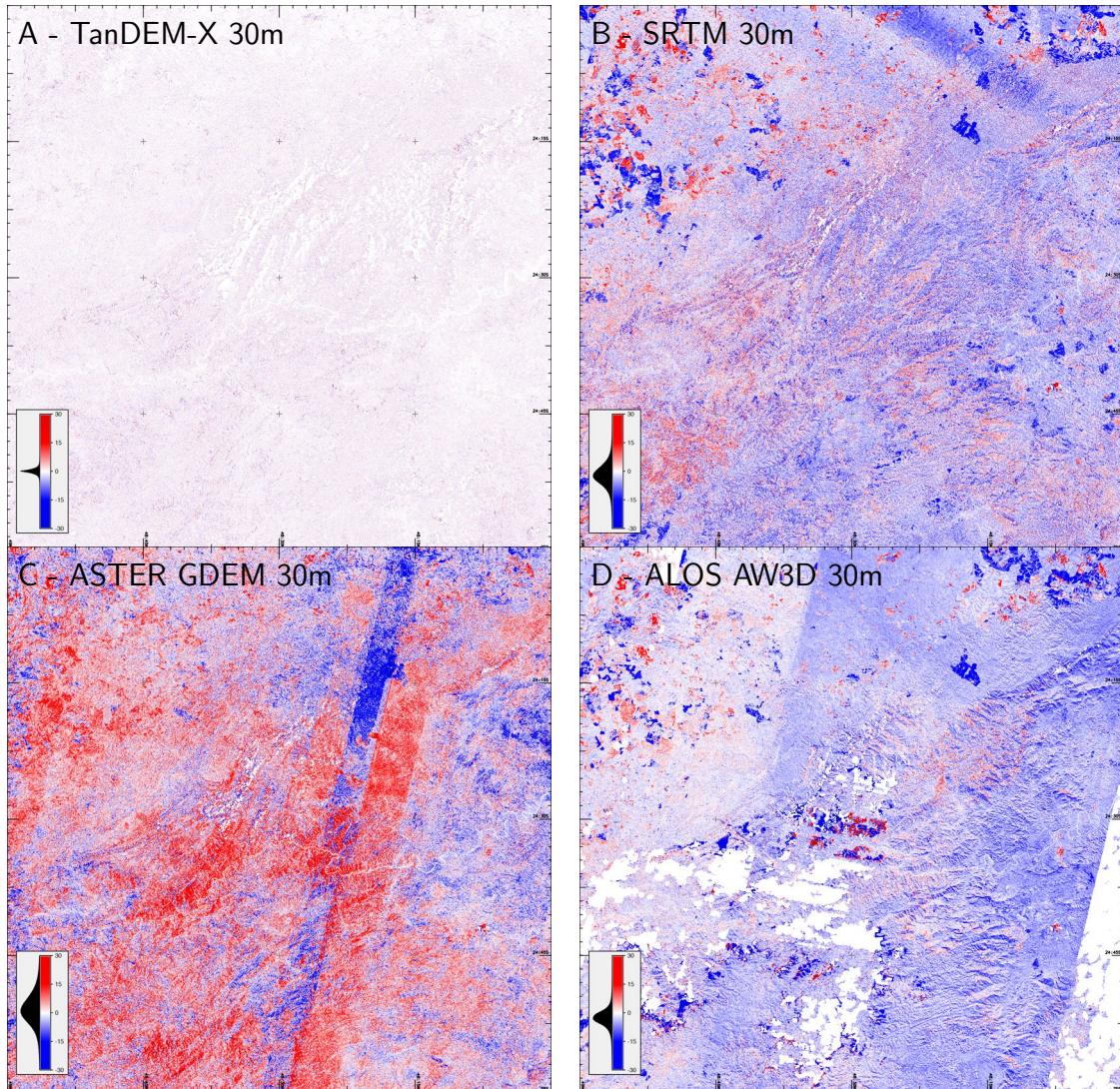


Figure S.6.4. Maps of differences in elevation about TanDEM-X 12 m for Iporanga area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Rio Claro

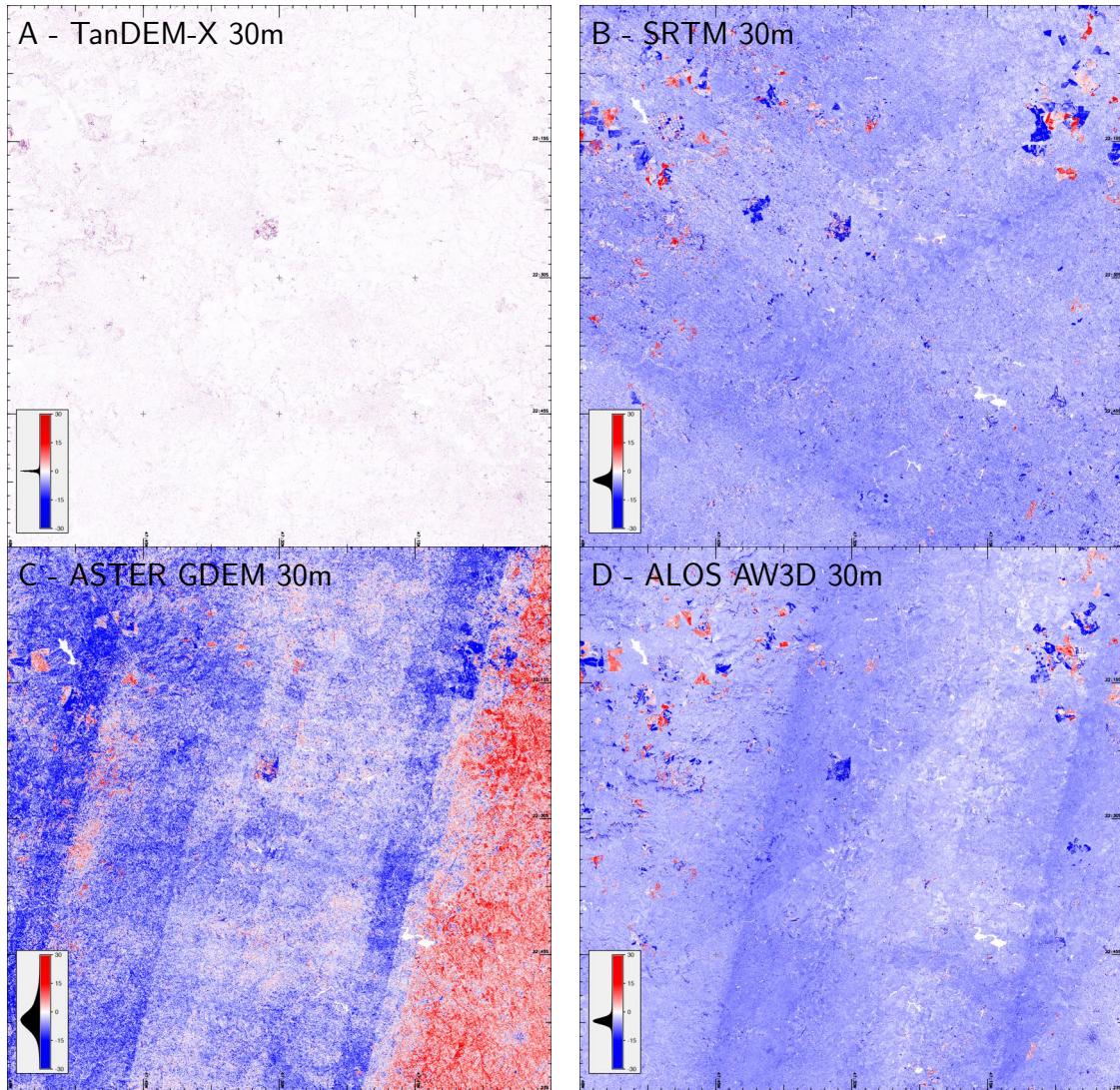


Figure S.6.5. Maps of differences in elevation about TanDEM-X 12 m for RioClaro area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Santa Catarina

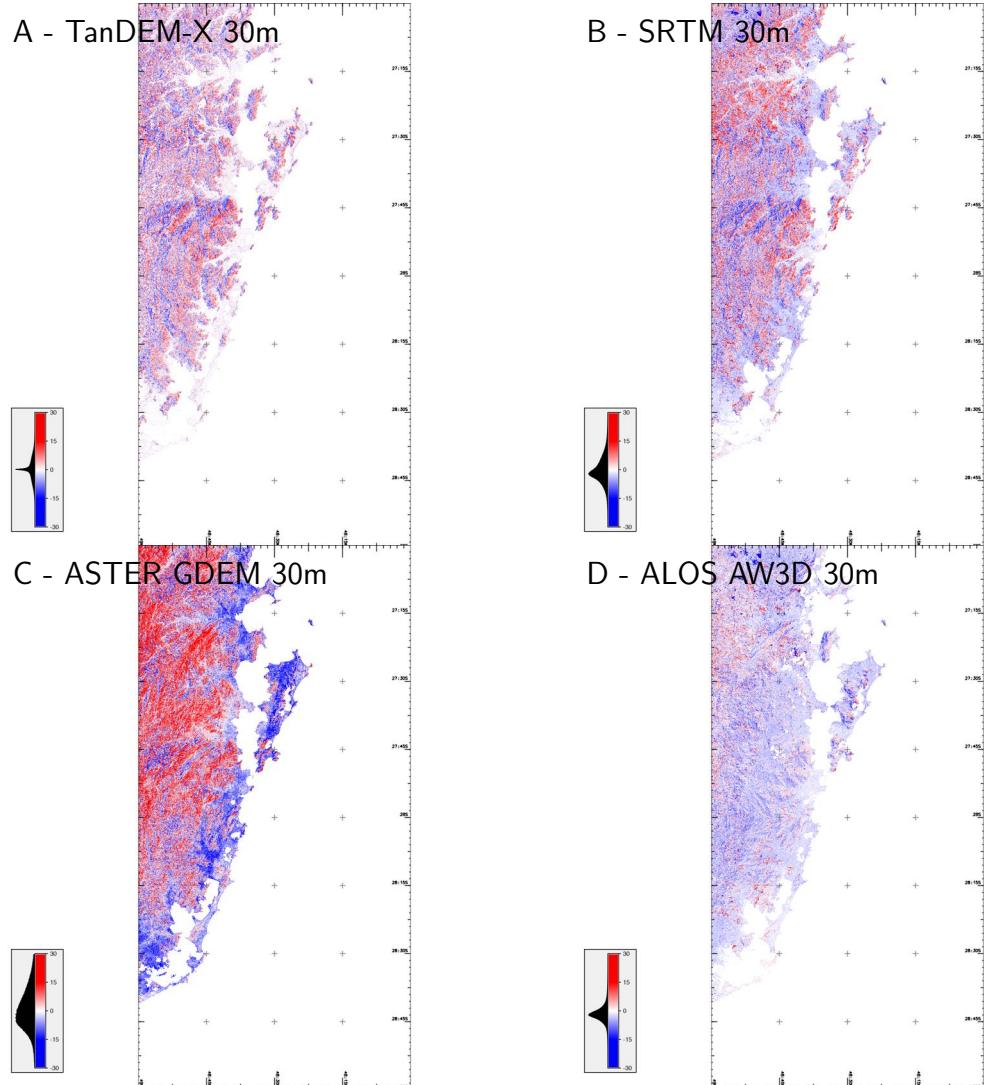


Figure S.6.6. Maps of differences in elevation about TanDEM-X 12 m for SantaCatarina area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Serra do Mar

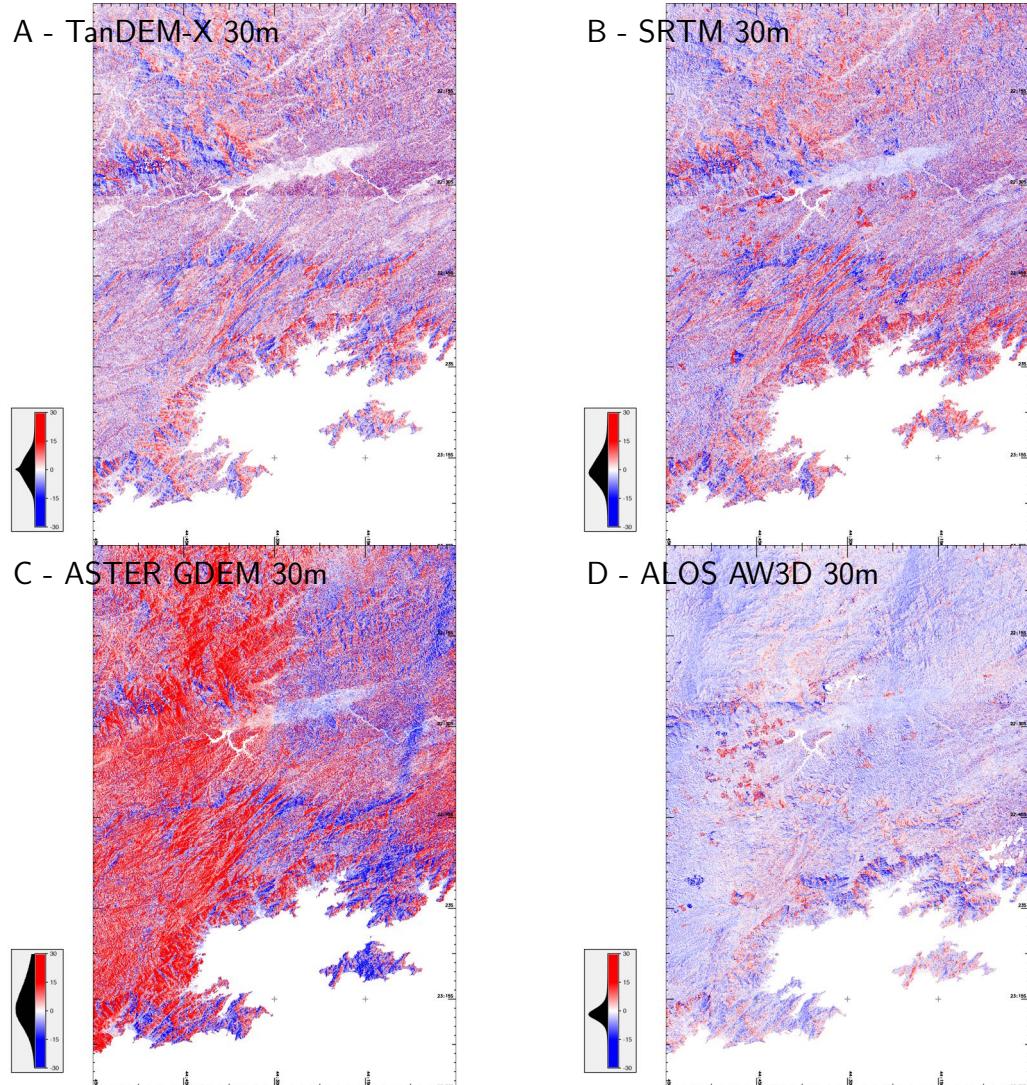


Figure S.6.7. Maps of differences in elevation about TanDEM-X 12 m for SerraMar area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

6.3. Histograms of differences in elevation of DEMs compared to TanDEM-X 12m Aracá

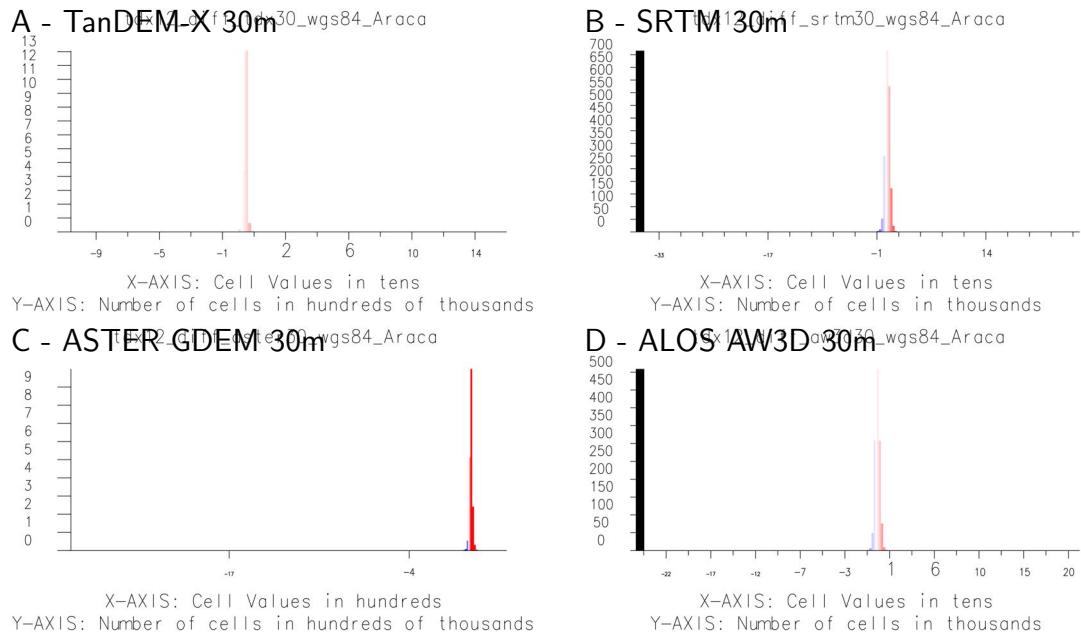


Figure S.6.8. Histograms of differences in elevation about TanDEM-X 12 m for Aracá area, colorized according to the map colorscale. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Barcelos

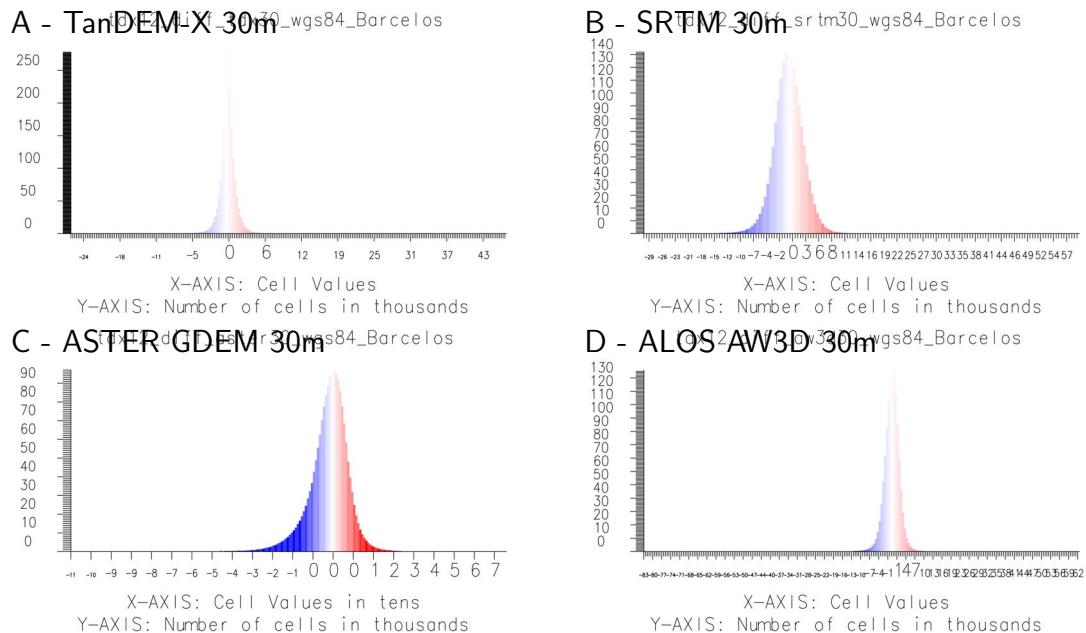


Figure S.6.9. Maps of differences in elevation about TanDEM-X 12 m for Barcelos area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Pantanal

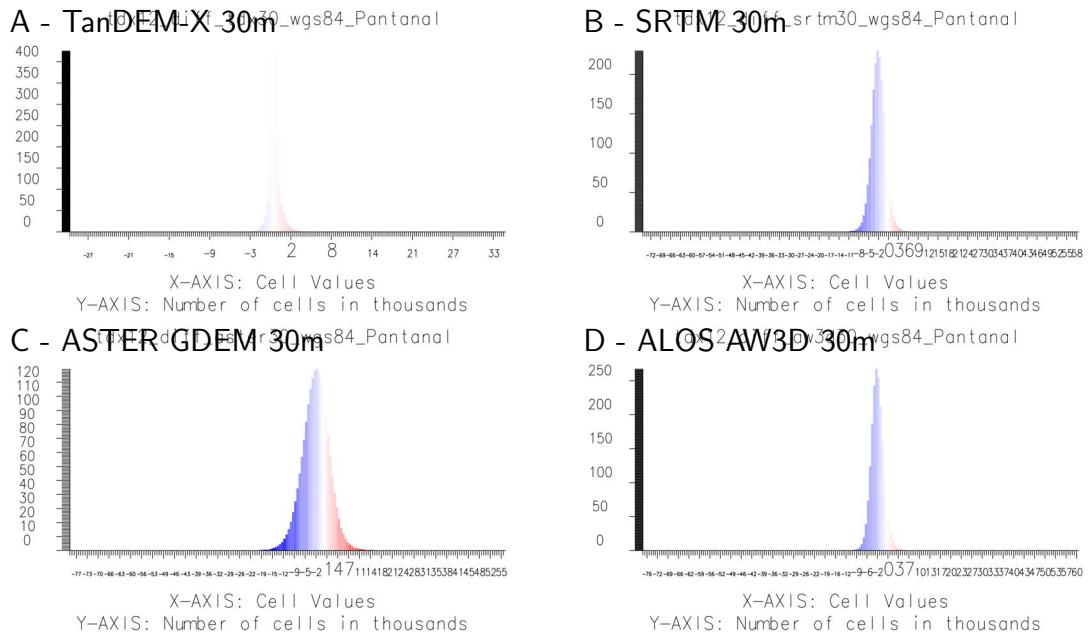


Figure S.6.10. Maps of differences in elevation about TanDEM-X 12 m for Pantanal area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Iporanga

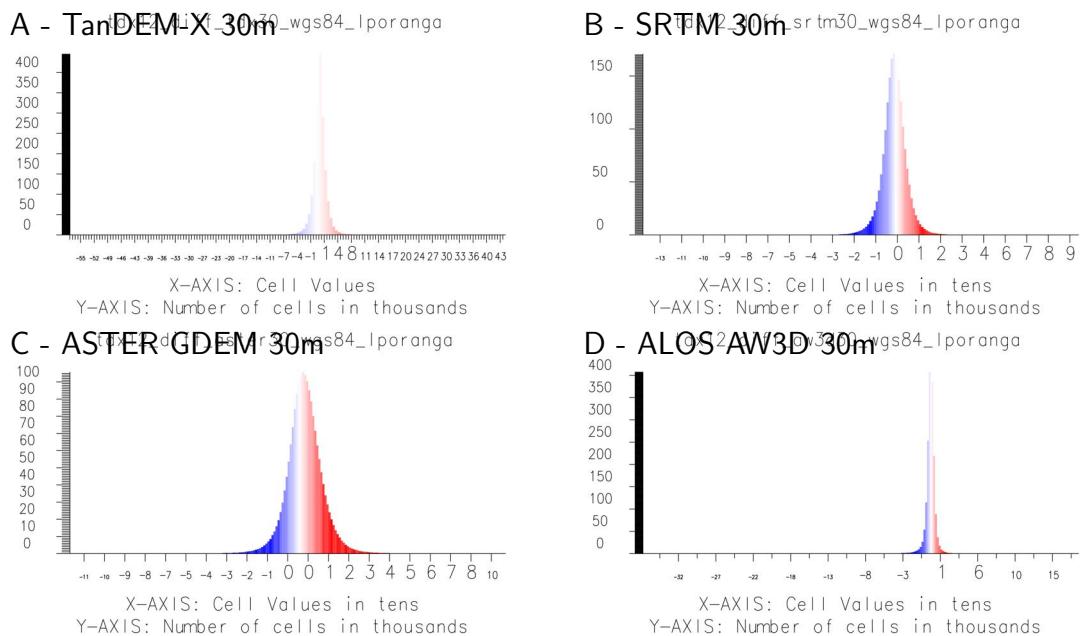


Figure S.6.11. Maps of differences in elevation about TanDEM-X 12 m for Iporanga area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Rio Claro

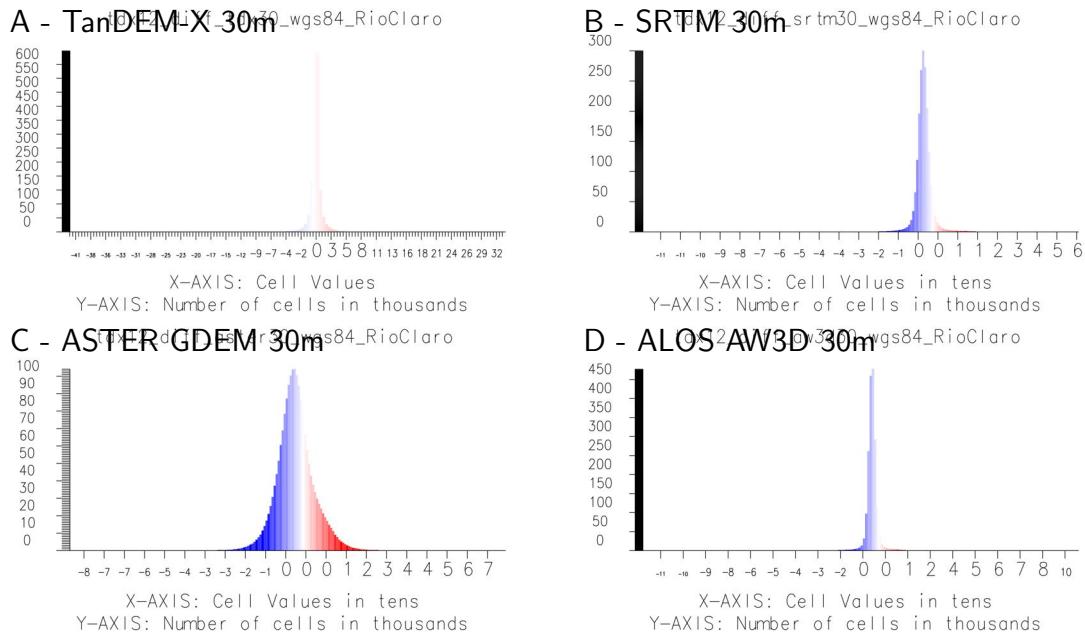


Figure S.6.12. Maps of differences in elevation about TanDEM-X 12 m for RioClaro area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Santa Catarina

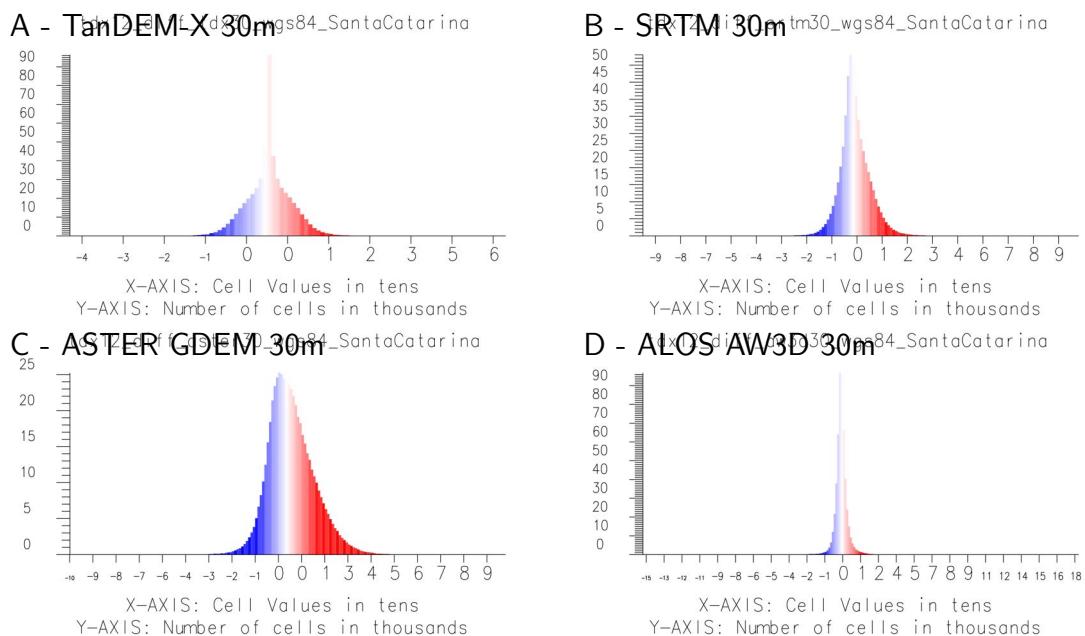


Figure S.6.13. Maps of differences in elevation about TanDEM-X 12 m for SantaCatarina area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

Serra do Mar

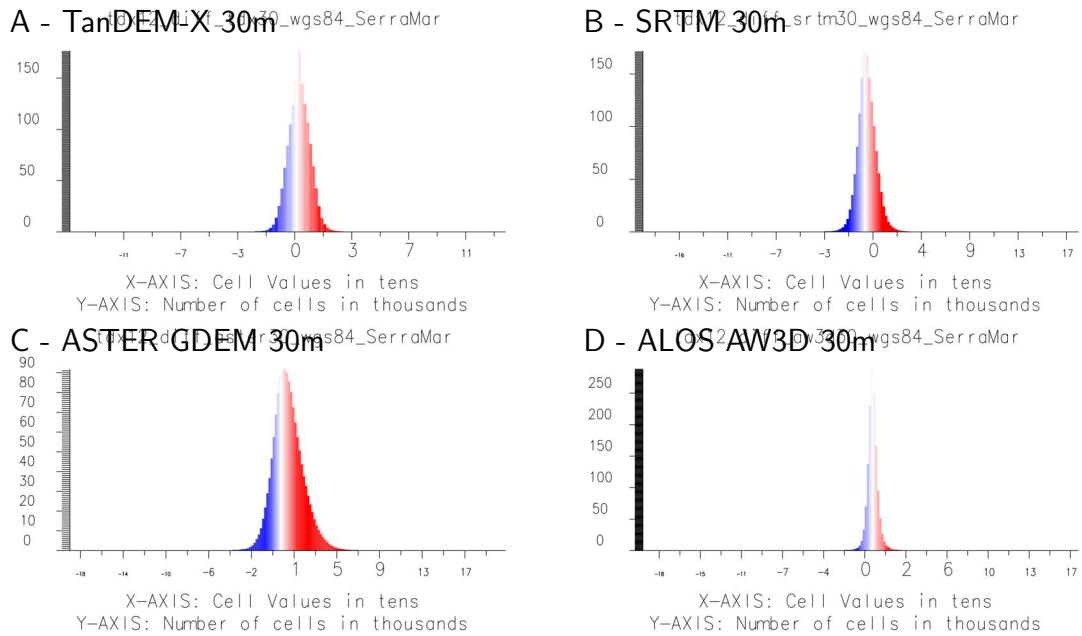


Figure S.6.14. Maps of differences in elevation about TanDEM-X 12 m for SerraMar area. A) TanDEM-X, 30 m resolution; B) SRTM, 30 m resolution; C) ASTER GDEM, 30 m resolution; E) ALOS AW3D, 30 m resolution.

6.4. Scatterplots of differences × aspect

Aracá

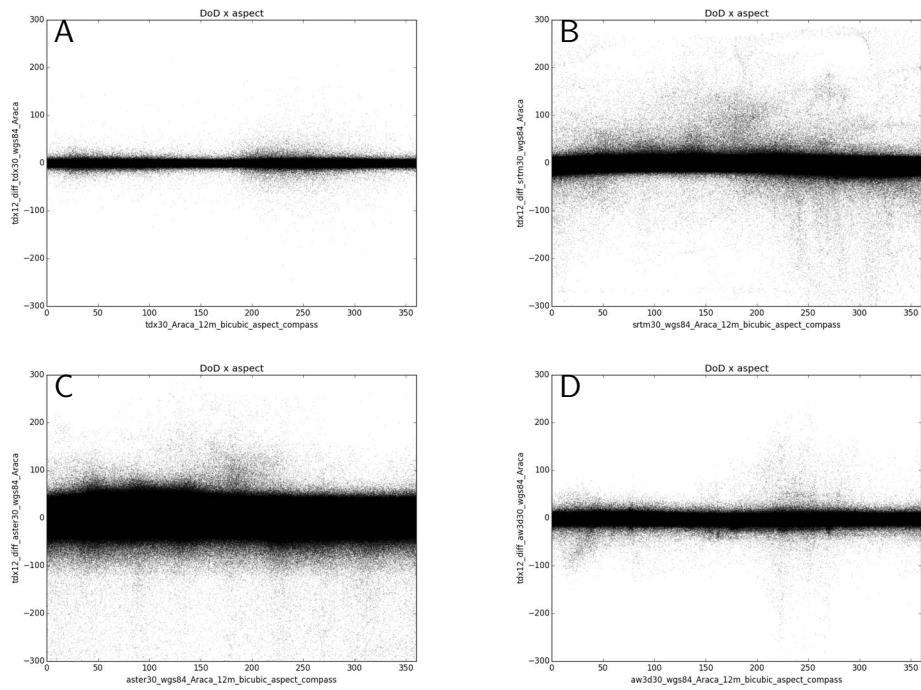


Figure S.6.15. Scatterplots of DoDs × aspect for Aracá area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

Barcelos

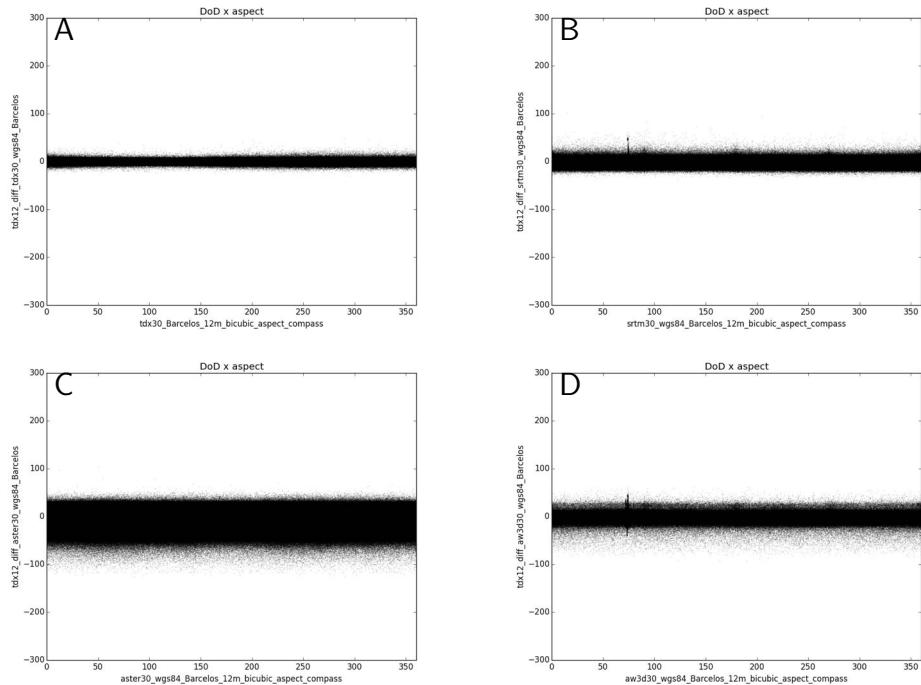


Figure S.6.16. Scatterplots of DoDs × aspect for Barcelos area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

Pantanal

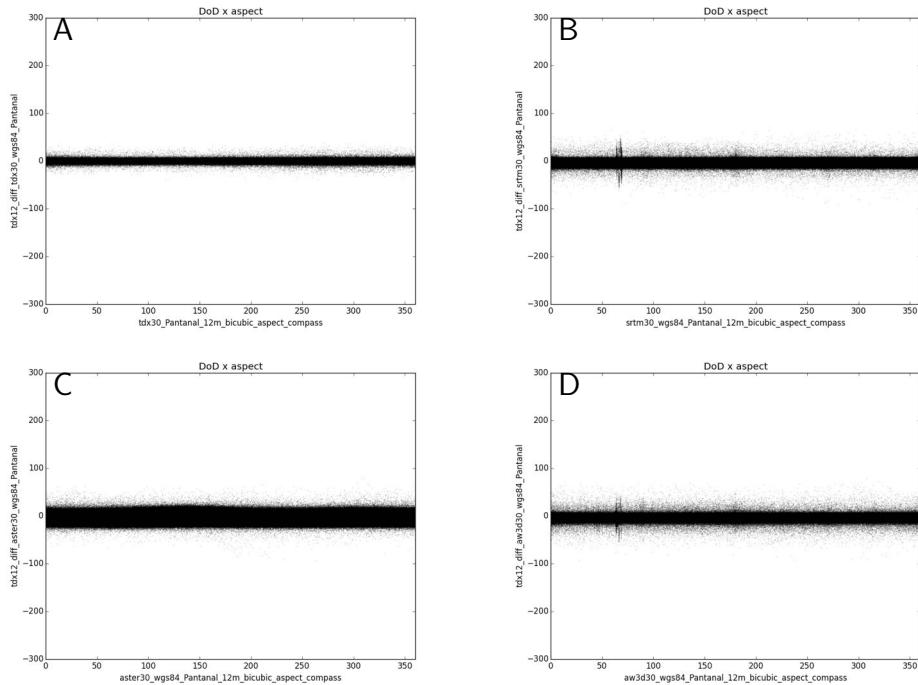


Figure S.6.17. Scatterplots of DoDs × aspect for Pantanal area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

Iporanga

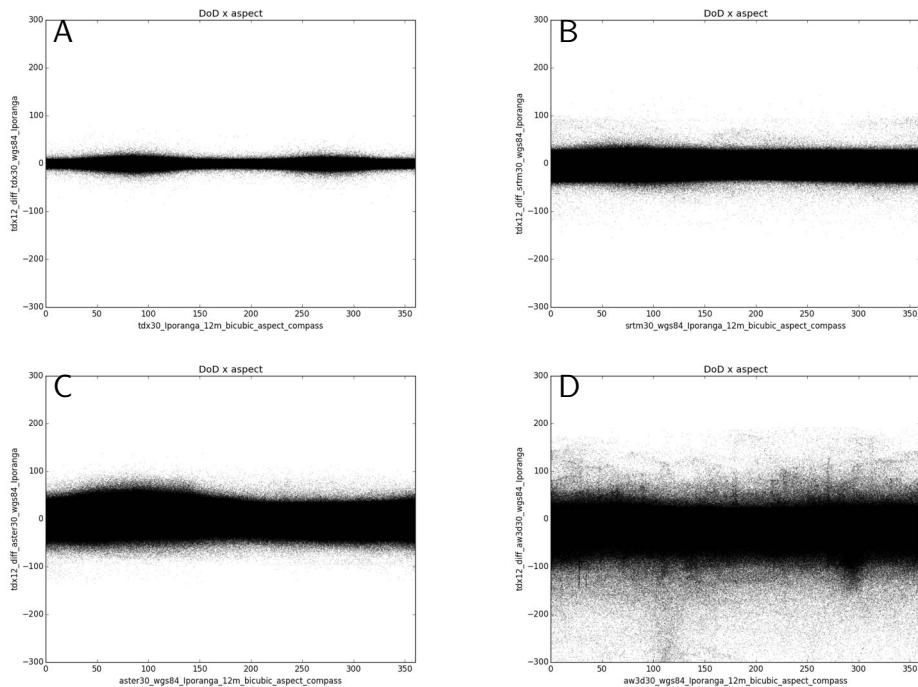


Figure S.6.18. Scatterplots of DoDs × aspect for Iporanga area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

Rio Claro

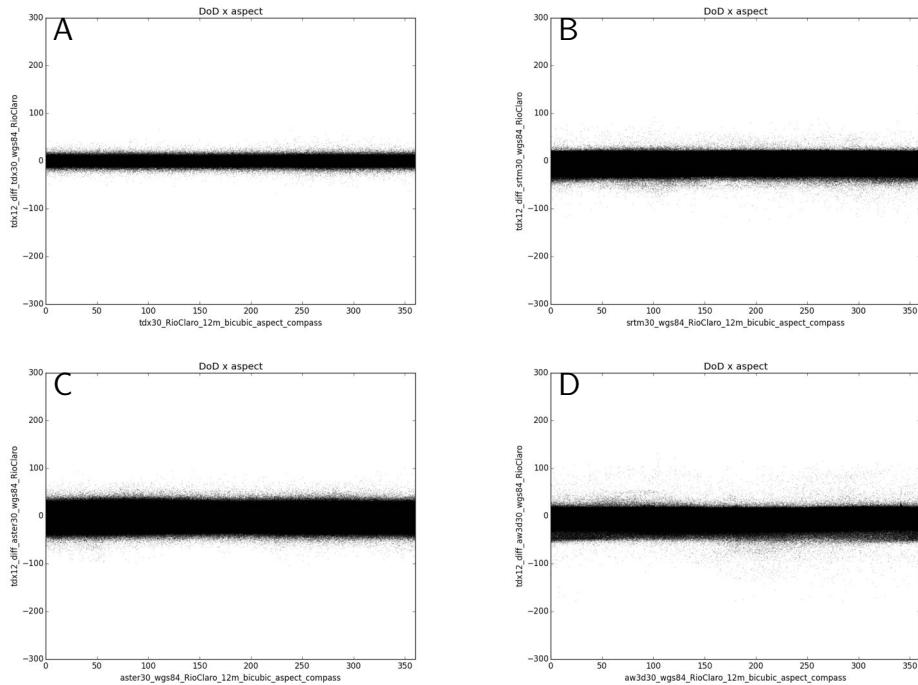


Figure S.6.19. Scatterplots of DoDs × aspect for Rio Claro area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

Santa Catarina

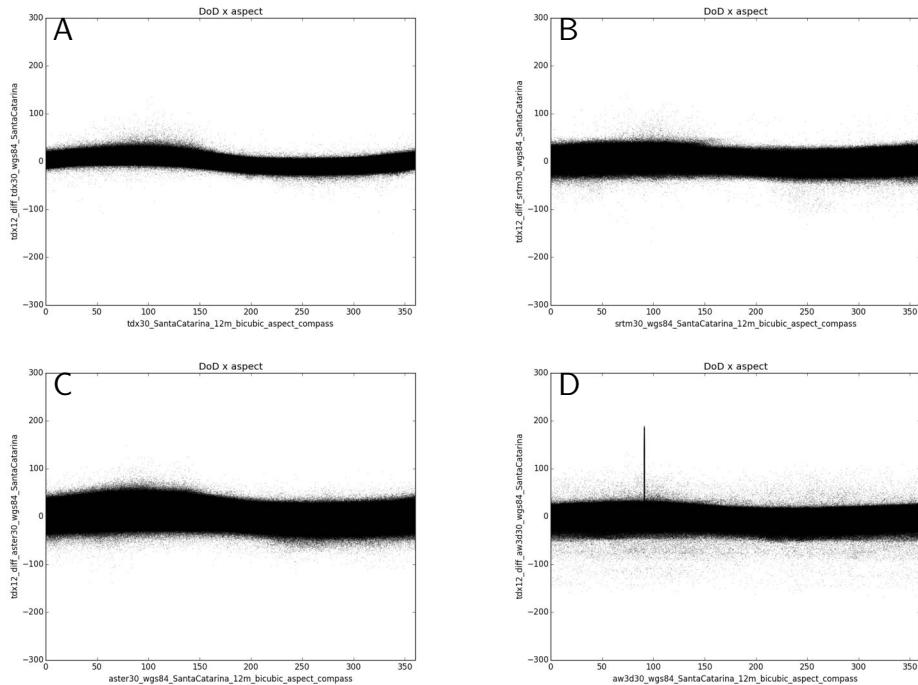


Figure S.6.20. Scatterplots of DoDs × aspect for Santa Catarina area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

Serra do Mar

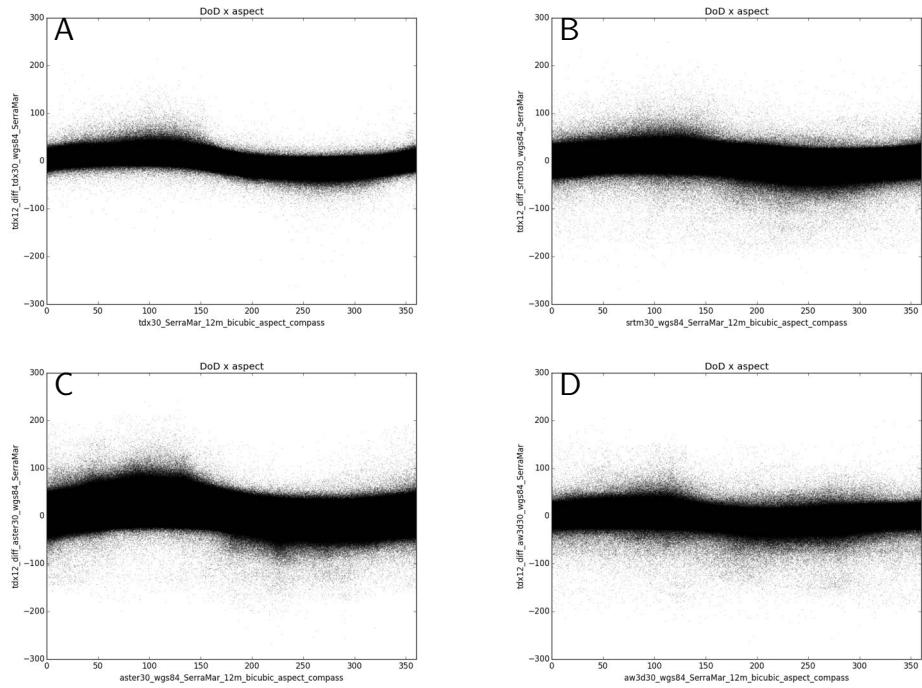


Figure S.6.21. Scatterplots of DoDs × aspect for Serra do Mar area. A) TanDEM-X 30m; B) SRTM 30m; C) ASTER GDEM 30m; D) ALOS AW3D 30m.

6.5. Scatterplots of elevation

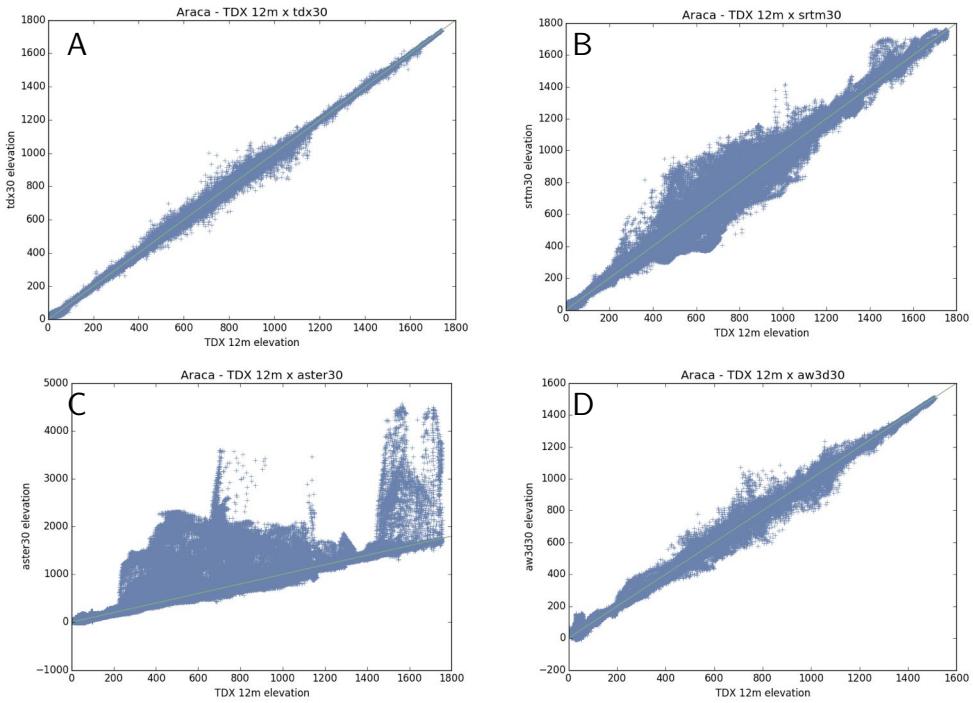


Figure S.6.22. Scatterplots of elevations for Aracá area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.

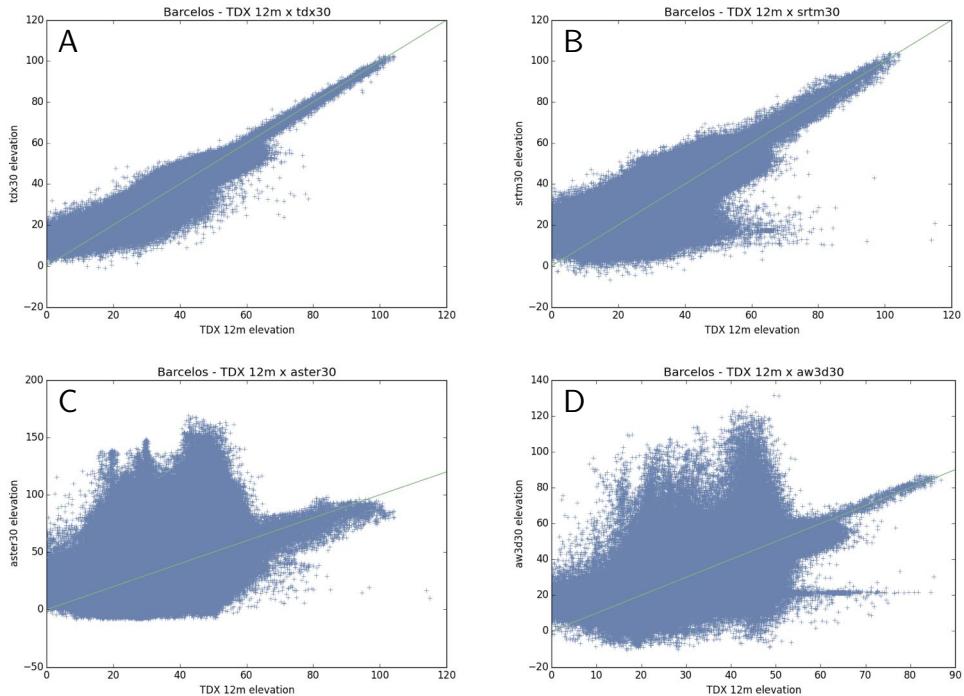


Figure S.6.23. Scatterplots of elevations for Barcelos area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.

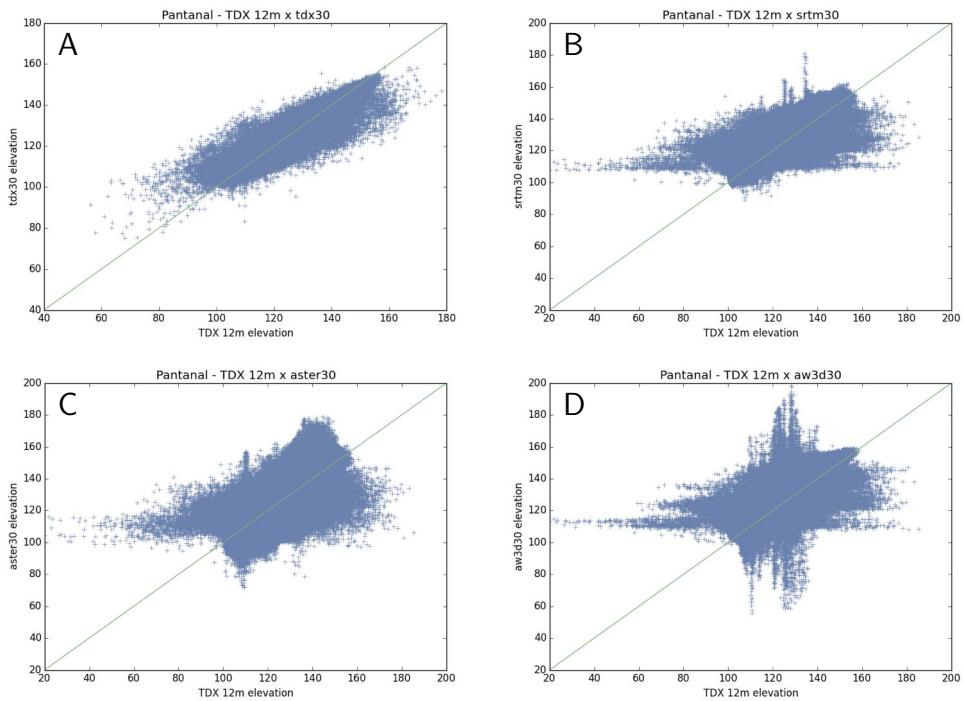


Figure S.6.24. Scatterplots of elevations for Pantanal area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.

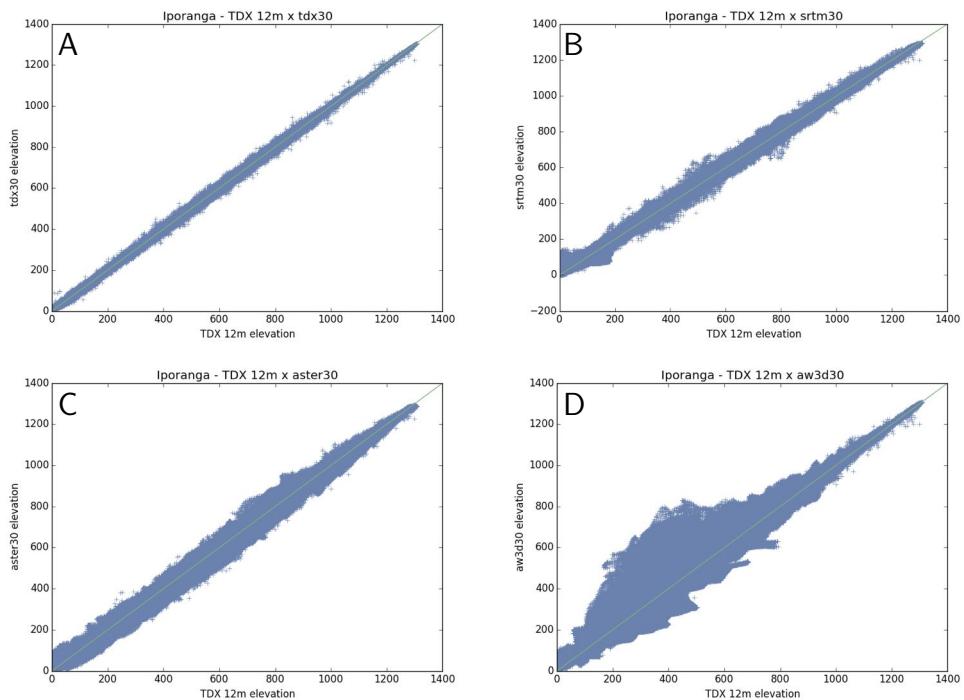


Figure S.6.25. Scatterplots of elevations for Iporanga area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.

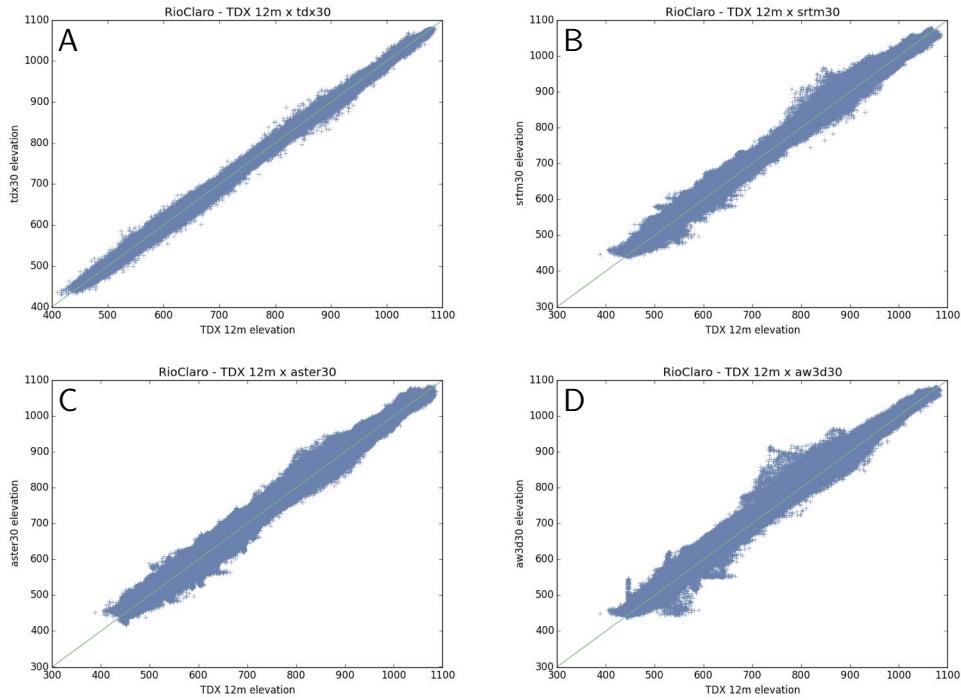


Figure S.6.26. Scatterplots of elevations for Rio Claro area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.

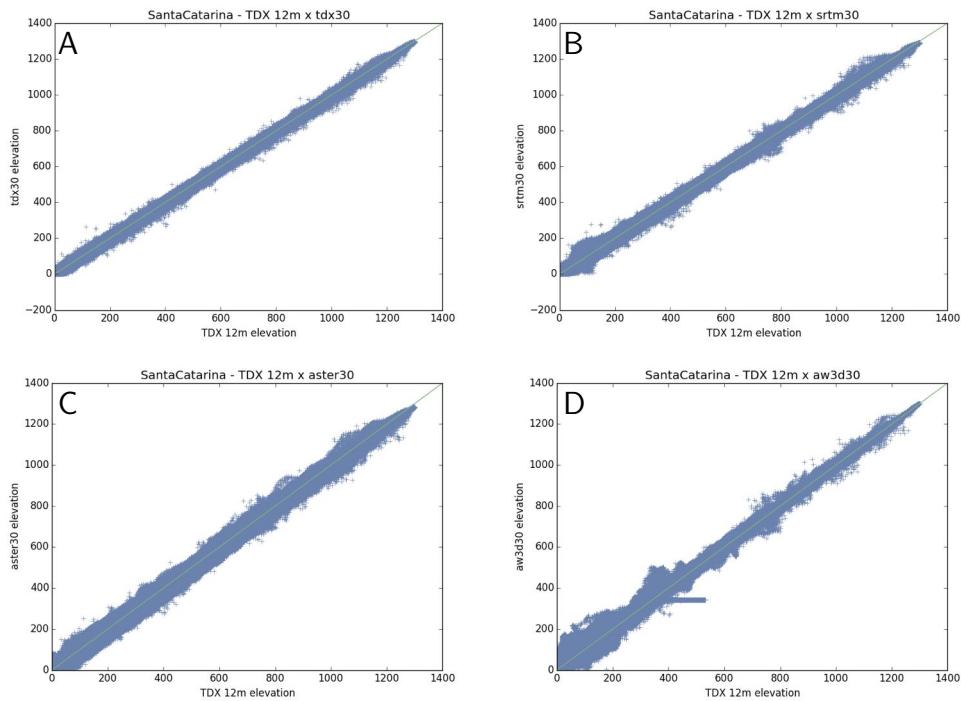


Figure S.6.27. Scatterplots of elevations for Santa Catarina area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.

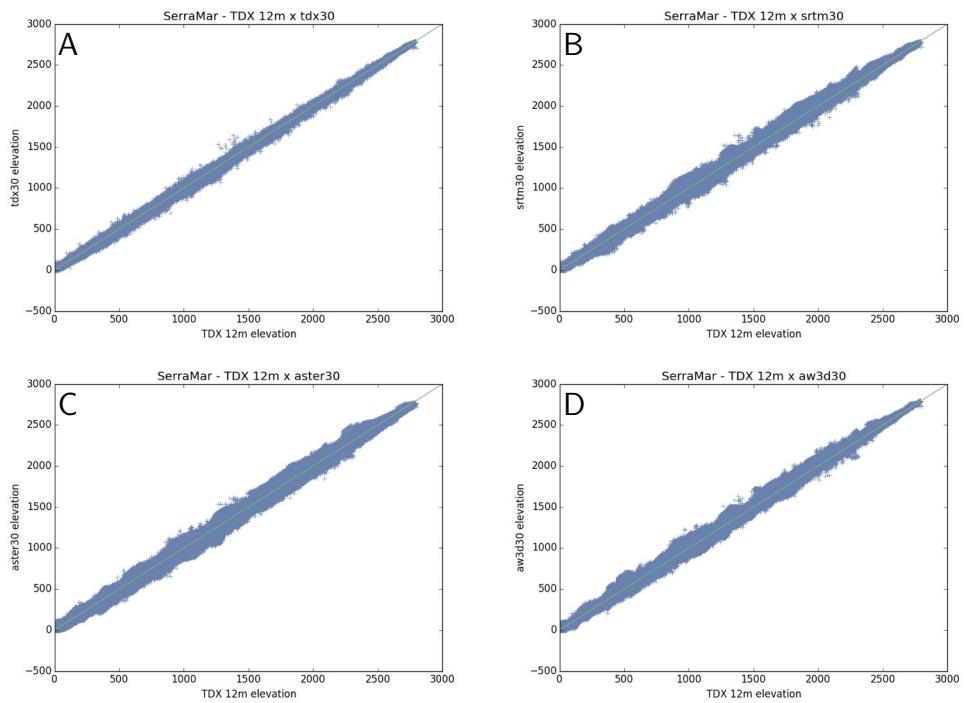


Figure S.6.28. Scatterplots of elevations for Serra do Mar area. A) TanDEM-X 12m × TanDEM-X 30m; B) TanDEM-X 12m × SRTM 30m; C) TanDEM-X 12m × ASTER GDEM 30m; D) TanDEM-X 12m × ALOS AW3D 30m.