- when it has to be right

Network Adjustment

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Created: 09/19/2024 14:33:41

Project Information

Project name:	Post Procesamiento Parque La Pradera
Date created:	09/19/2024 10:59:00
Time zone:	-5h 00'
Coordinate system name:	WGS 1984
Application software:	LEICA Geo Office 8.4
Processing kernel:	MOVE3 4.1

General Information

Adjustment

Type:	Constrained		
Dimension:	3D		
Coordinate system:	WGS 1984		
Height mode:	Ellipsoidal		
Number of iterations:	1		
Maximum coord correction in last iteration:	0.0000 m	✔	(tolerance is met)

Stations

Number of (partly) known stations:	3
Number of unknown stations:	2
Total:	5

Observations

GPS coordinate differences:	18 (6 baselines)
Known coordinates:	9
Total:	27

Unknowns

Coordinates:	15
Total:	15
Degrees of freedom:	12

Testing

Alfa (multi dimensional):	0.3362		
Alfa 0 (one dimensional):	5.0 %		
Beta:	80.0 %		
Sigma a-priori (GPS):	10.0		
Critical value W-test:	1.96		
Critical value T-test (2-dimensional):	2.42		
Critical value T-test (3-dimensional):	1.89		
Critical value F-test:	1.12		
F-test:	1.41	⚠	(rejected)

Results based on a-posteriori variance factor

Adjustment Results

Coordinates

Station		Coordinate	Corr	Sd	
GPS1	Latitude	8° 44' 26.55986" N	0.0000 m	0.0039 m	
	Longitude	75° 52' 28.05486" W	0.0000 m	0.0057 m	
	Height	16.8880 m	0.1040 m	0.0117 m	
GPS2	Latitude	8° 44' 27.25759" N	0.0000 m	0.0047 m	
	Longitude	75° 52' 24.27142" W	0.0000 m	0.0066 m	
	Height	16.6190 m	0.1040 m	0.0146 m	
MOTE	Latitude	8° 47' 31.07950" N	0.0000 m	-	fixed
	Longitude	75° 51' 38.40194" W	0.0000 m	-	fixed
	Height	33.1697 m	0.0000 m	-	fixed
SINC	Latitude	9° 18' 56.13322" N	0.0000 m	-	fixed
	Longitude	75° 23' 15.65811" W	0.0000 m	-	fixed
	Height	201.2431 m	0.0000 m	-	fixed
UNIO	Latitude	8° 51' 05.34424" N	0.0000 m	-	fixed
	Longitude	75° 16' 38.43321" W	0.0000 m	-	fixed
	Height	53.6692 m	0.0000 m	-	fixed

Observations and Residuals

	Station	Target	Adj obs	Resid	Resid (ENH)	Sd
DX	SINC	GPS2	-49304.5376 m	0.0315 m	0.0445 m	0.0070 m
DY			-22739.3166 m	0.0554 m	-0.0006 m	0.0143 m
DZ			-62803.7250 m	-0.0080 m	-0.0464 m	0.0051 m
DX	SINC	GPS1	-49415.8230 m	0.0203 m	0.0290 m	0.0060 m
DY			-22770.9567 m	0.0372 m	-0.0019 m	0.0114 m
DZ			-62824.8712 m	-0.0070 m	-0.0316 m	0.0042 m
DX	UNIO	GPS2	-63054.4861 m	0.0443 m	0.0352 m	0.0070 m
DY			-18111.8185 m	-0.0297 m	-0.0072 m	0.0143 m
DZ			-12092.0202 m	-0.0011 m	0.0393 m	0.0051 m
DX	UNIO	GPS1	-63165.7715 m	0.0258 m	0.0143 m	0.0060 m
DY			-18143.4586 m	-0.0420 m	-0.0059 m	0.0114 m
DZ			-12113.1664 m	0.0014 m	0.0469 m	0.0042 m
DX	MOTE	GPS2	-1153.3227 m	-0.0011 m	-0.0015 m	0.0070 m
DY			-1161.1068 m	-0.0019 m	0.0004 m	0.0143 m
DZ			-5583.9913 m	0.0007 m	0.0017 m	0.0051 m
DX	MOTE	GPS1	-1264.6080 m	-0.0033 m	-0.0012 m	0.0060 m
DY			-1192.7469 m	0.0081 m	0.0005 m	0.0114 m
DZ			-5605.1375 m	-0.0008 m	-0.0086 m	0.0042 m

GPS Baseline Vector Residuals

	Station	Target	Adj vector [m]	Resid [m]	Resid [ppm]
DV	SINC	GPS2	83020.0085	0.0642	0.8
DV	SINC	GPS1	83110.7963	0.0430	0.5
DV	UNIO	GPS2	66709.2433	0.0533	0.8
DV	UNIO	GPS1	66826.8552	0.0493	0.7
DV	MOTE	GPS2	5818.8728	0.0023	0.4
DV	MOTE	GPS1	5868.5130	0.0087	1.5

Absolute Error Ellipses (2D - 39.4% 1D - 68.3%)

Station	A [m]	B [m]	A/B	Phi	Sd Hgt [m]
GPS1	0.0057	0.0039	1.5	88°	0.0117
GPS2	0.0066	0.0047	1.4	84°	0.0146
MOTE	0.0000	0.0000	1.0	90°	0.0000
SINC	0.0000	0.0000	1.0	90°	0.0000
UNIO	0.0000	0.0000	1.0	90°	0.0000

Testing and Estimated Errors

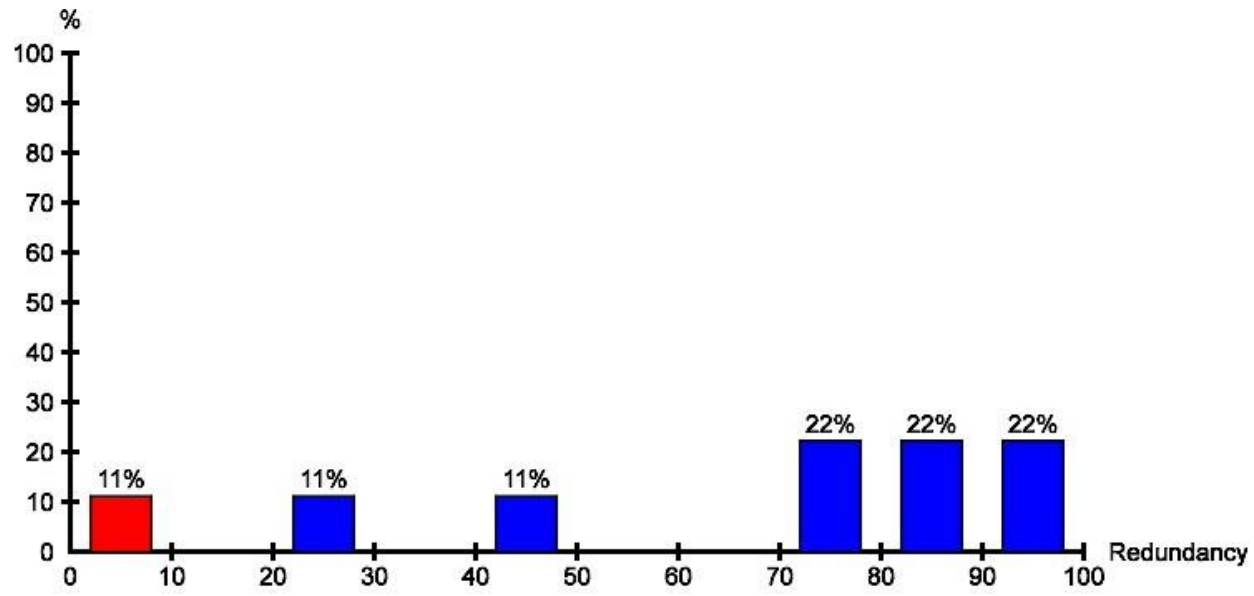
Coordinate Tests

Station		MDB	BNR	W-Test	T-Test
MOTE	Latitude	0.0189 m	999.9	0.00	0.00
	Longitude	0.0512 m	999.9	0.00	
	Height	0.0527 m	999.9	0.00	
SINC	Latitude	0.0240 m	999.9	0.00	0.00
	Longitude	0.0731 m	999.9	0.00	
	Height	0.0615 m	999.9	0.00	
UNIO	Latitude	0.0229 m	999.9	0.00	0.00
	Longitude	0.0686 m	999.9	0.00	
	Height	0.0593 m	999.9	0.00	

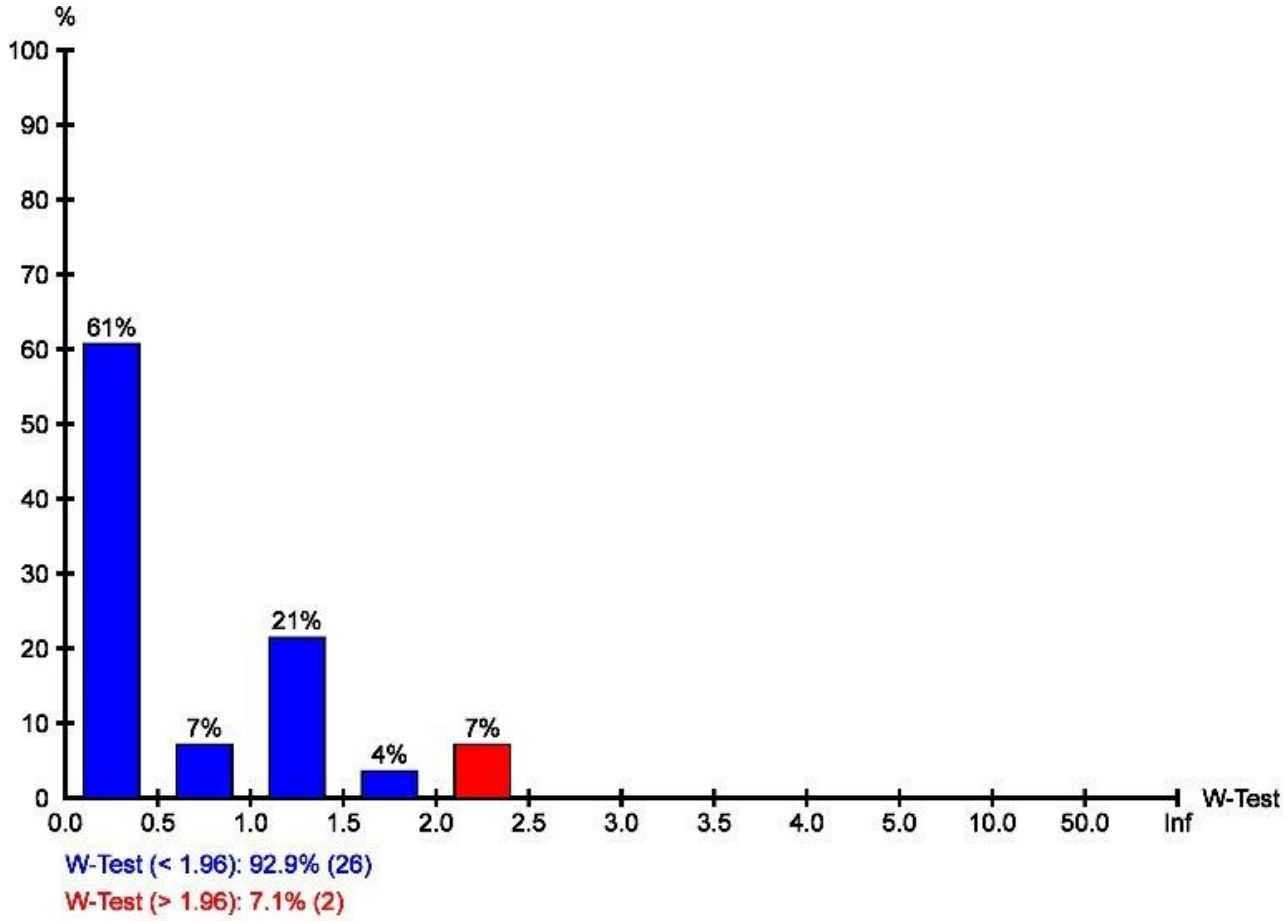
Observation Tests

	Station	Target	MDB	Red	BNR	W-Test	T-Test
DX	SINC	GPS2	0.1311 m	97	0.6	0.33	0.93
DY			0.1171 m	85	1.2	1.45	
DZ			0.0426 m	86	1.1	-0.49	
DX	SINC	GPS1	0.0880 m	95	0.7	0.46	1.18
DY			0.0766 m	78	1.4	1.59	
DZ			0.0289 m	79	1.4	-0.52	
DX	UNIO	GPS2	0.1264 m	96	0.7	1.15	0.72
DY			0.1134 m	84	1.2	-1.05	
DZ			0.0413 m	85	1.2	0.20	
DX	UNIO	GPS1	0.0818 m	94	0.7	1.07	2.03 ⚠
DY			0.0725 m	75	1.6	-2.18 ⚠	
DZ			0.0273 m	76	1.5	0.15	
DX	MOTE	GPS2	0.0936 m	6	13.5	-1.09	0.49
DY			0.0899 m	29	5.5	-0.28	
DZ			0.0325 m	27	5.4	0.21	
DX	MOTE	GPS1	0.0620 m	9	9.9	-1.13	0.59
DY			0.0625 m	46	3.7	0.58	
DZ			0.0233 m	43	3.6	0.29	

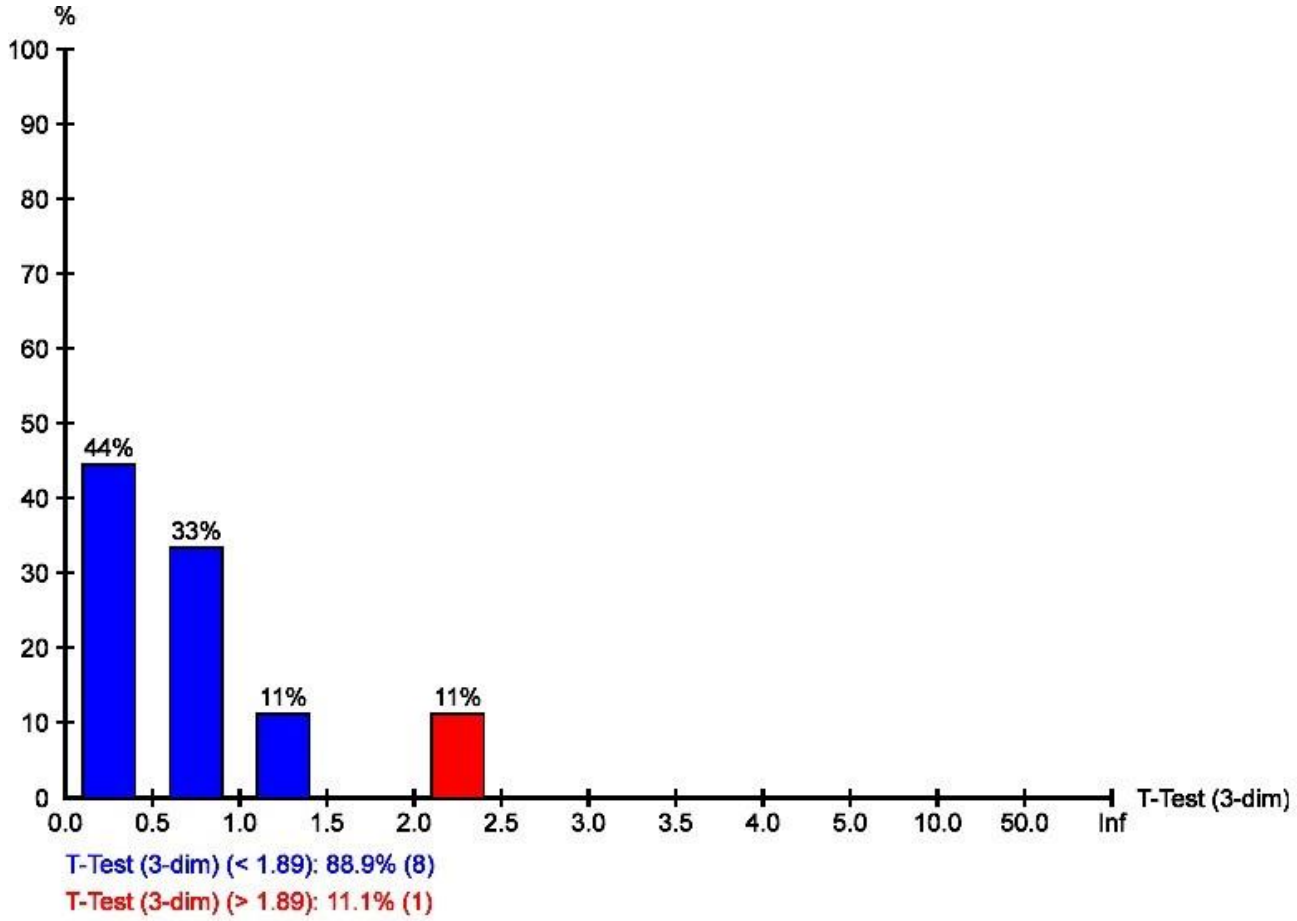
Redundancy:



W-Test:



T-Test (3-dimensional):



Estimated Errors (Observations)

Estimated Errors For Observations With Rejected W-Tests (max 10)

	Station	Target	W-Test	Fact	Est err
DY	UNIO	GPS1	-2.18	1.1	-0.0563 m

Estimated Errors For Observations With Rejected Antenna Hgt W-Tests (max 10)

Station	Target	W-Test	Fact	MDB [m]	Est ant err [m]
UNIO	GPS1	2.37	1.2	0.0723	0.0613

Estimated Errors For Observations With Rejected T-Tests (max 10)

	Station	Target	T-Test	Fact	Est err
DX	UNIO	GPS1	2.03	1.0	0.0300 m
DY					-0.0587 m
DZ					0.0042 m