

Results of the SLR Tracking Data Quality Control During the Operational Processing

Horst Müller

Deutsches Geodätisches Forschungsinstitut, München
E-Mail: mueller@dgfi.badw.de

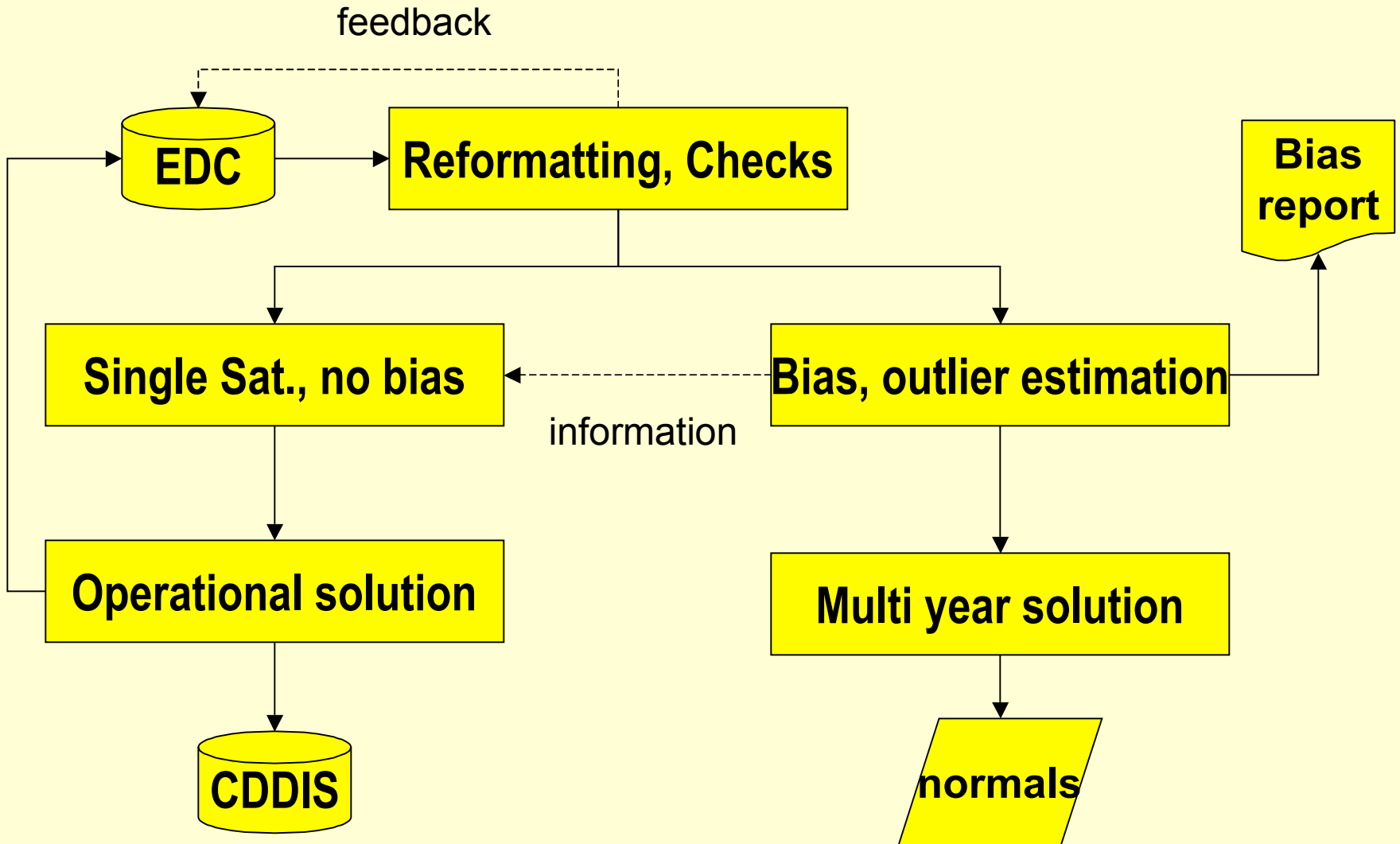
Processing

- Weekly solutions
 - Station coordinates
 - X- and Y-pole, Length of day
- Schedule
 - Tuesday, processing: data from prev. week (Sunday –Saturday)
 - Wednesday, combination
- Model
 - IERS 2000 conventions
- Satellites used
 - LAGEOS-1/2
 - ETALON-1/2

Quality control performed at DGFI for operational solution

- Bias estimation
- Orbit fit
- Similarity transformation
 - Previous week
 - LAGEOS-1 vs. LAGEOS-2
 - LAGEOS-only vs. comb. solution
 - Combined solution vs. ITRF2000
- EOP's vs. Bulletin-A values

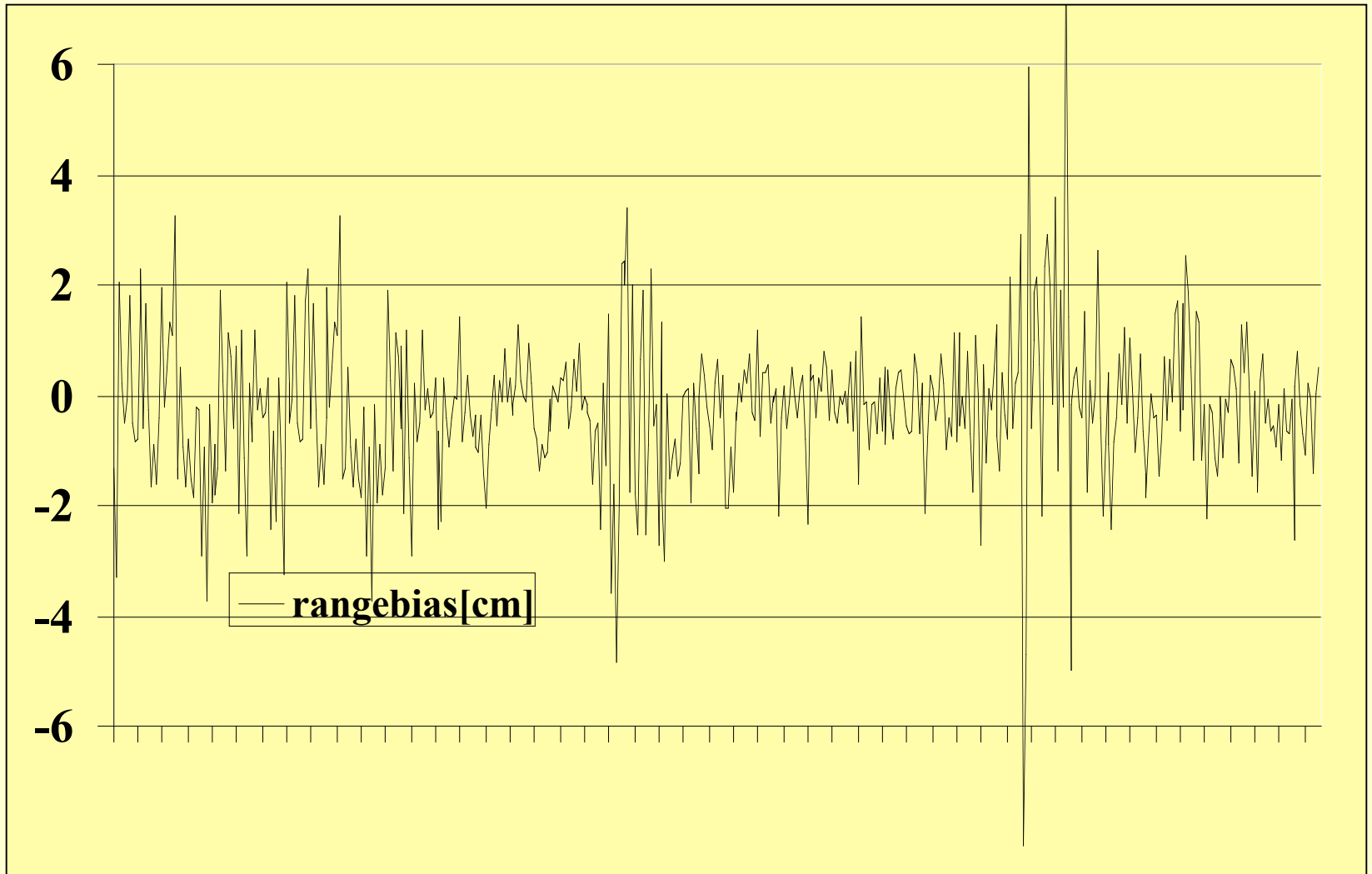
Processing Chain



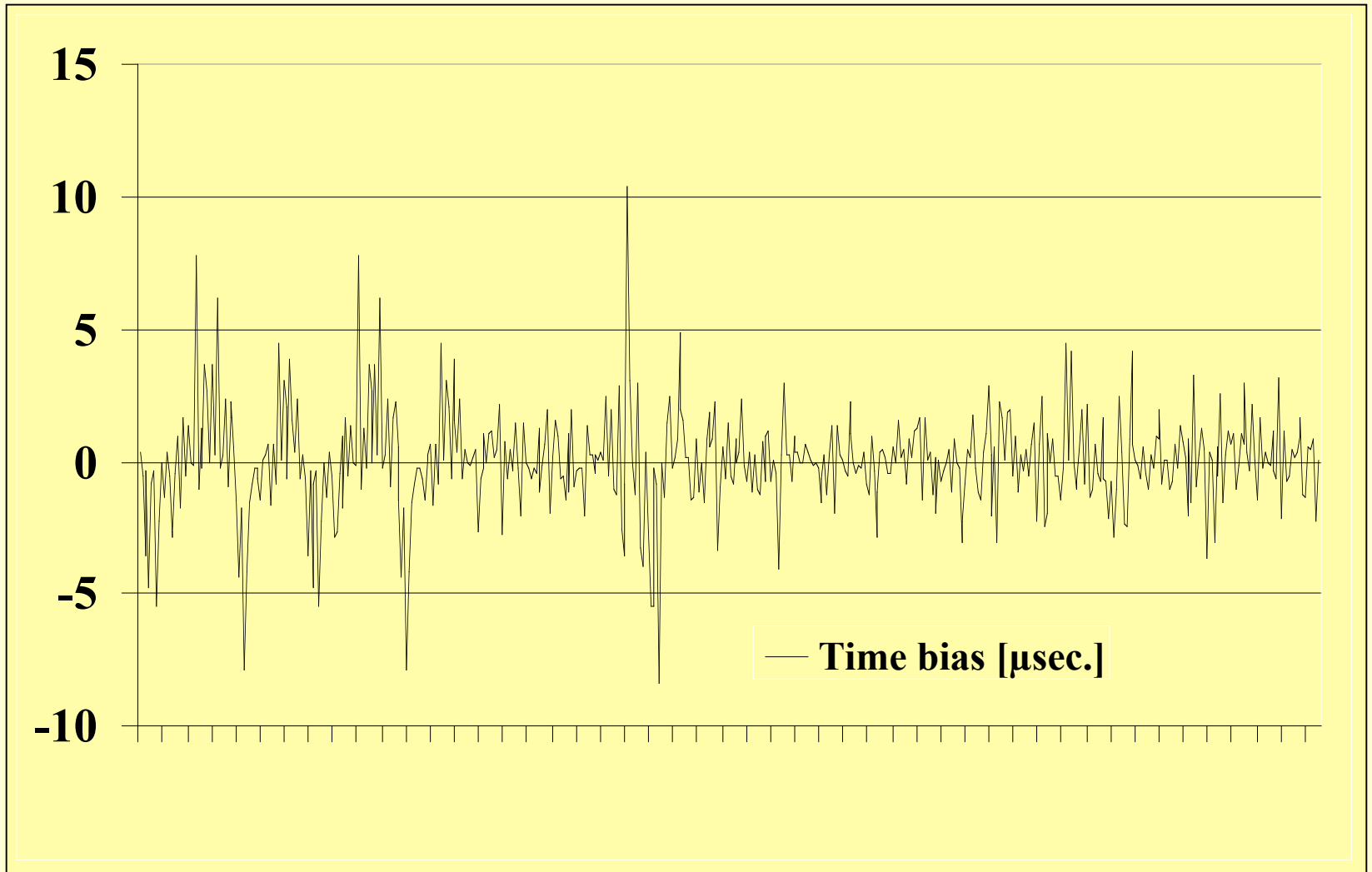
Bias report

Station	year	Month	day	hour	range	bias[cm]	sigma	timebias [μsec.]	sigma	no. obs
Graz_____	2004	5	24	03:08	:	-0.60	0.58	0.15	1.59	6
Graz_____	2004	5	24	21:58	:	0.56	0.61	-0.27	1.61	3
...										
Maidanak	2004	5	24	18:20	:	-1.12	0.51	1.60	1.51	8
Maidanak	2004	5	24	21:42	:	-0.43	0.56	-1.61	1.39	8
Maidanak	2004	5	25	17:04	:	-1.14	0.50	-0.47	1.59	5
Maidanak	2004	5	25	20:22	:	0.43	0.54	1.04	1.62	4
....										
Herstmon	2004	5	27	18:00	:	-0.84	0.29	2.74	1.17	16
Herstmon	2004	5	27	21:26	:	-0.37	0.35	1.75	1.17	14
Herstmon	2004	5	28	00:56	:	0.36	0.30	-3.07	1.14	19
Herstmon	2004	5	28	04:36	:	-0.52	0.43	1.46	1.44	12
San_Fern	2004	5	23	00:36	:	-0.12	0.70	0.30	1.53	5
San_Fern	2004	5	26	00:10	:	-0.57	0.59	-2.01	1.45	9
San_Fern	2004	5	28	01:02	:	0.28	0.67	1.09	1.52	9
San_Fern	2004	5	29	22:16	:	0.32	0.80	0.54	1.60	7
Zimm._re	2004	5	23	00:36	:	-2.18	0.33	-0.11	1.17	14
Zimm._re	2004	5	23	12:54	:	-1.03	0.54	0.69	1.56	9
Zimm._re	2004	5	23	16:36	:	-1.22	0.34	-1.06	1.22	11
Zimm._re	2004	5	23	20:02	:	-0.98	0.33	0.40	1.21	14
.....										
Zimmerwa	2004	5	23	00:40	:	-0.12	0.34	-0.22	1.19	15
Zimmerwa	2004	5	23	12:56	:	0.15	0.56	-0.64	1.59	7
Zimmerwa	2004	5	23	16:36	:	-1.38	0.35	-1.60	1.24	9
Zimmerwa	2004	5	23	20:02	:	-1.00	0.33	2.08	1.21	14

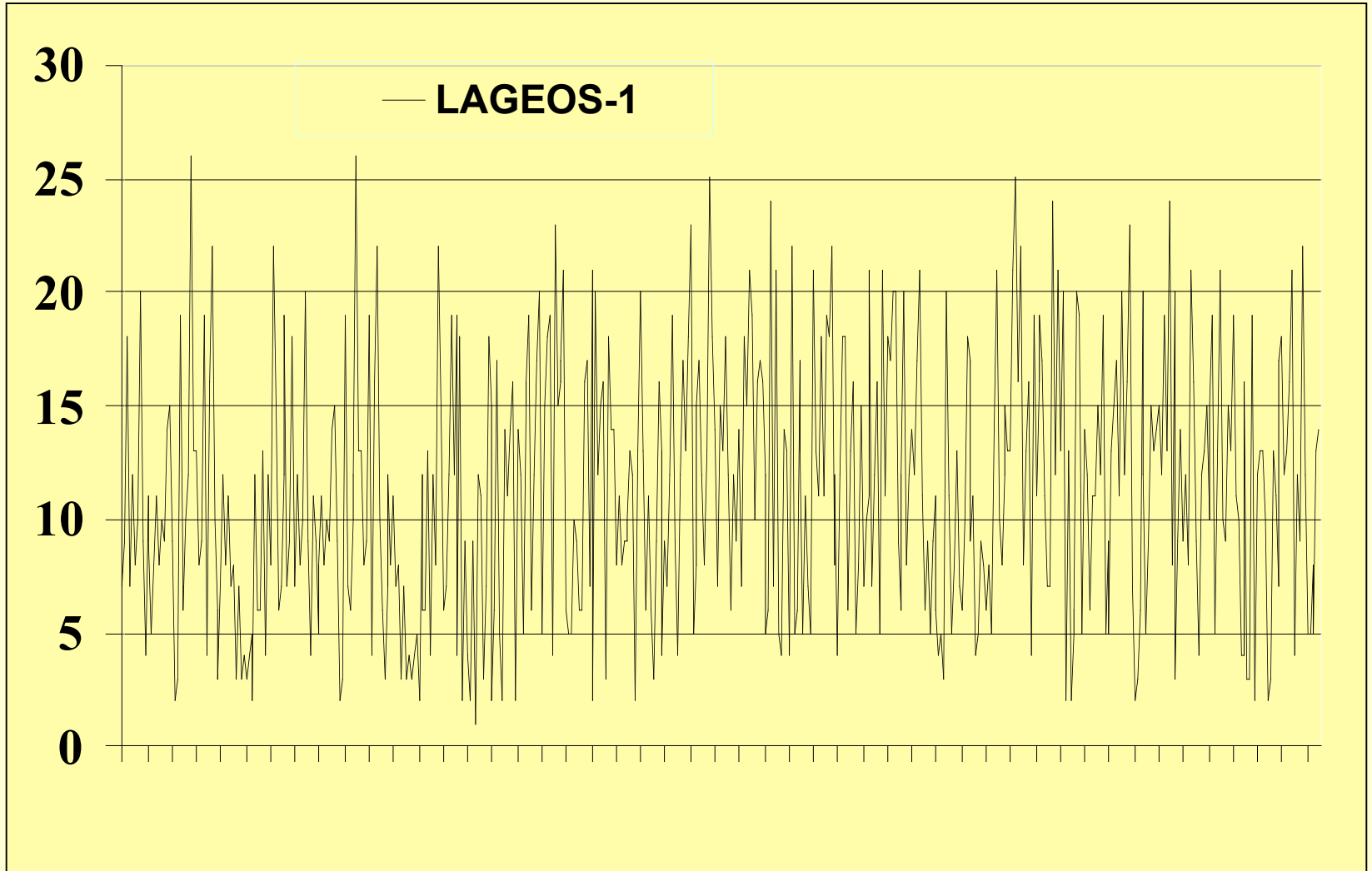
Yarragadee range bias information



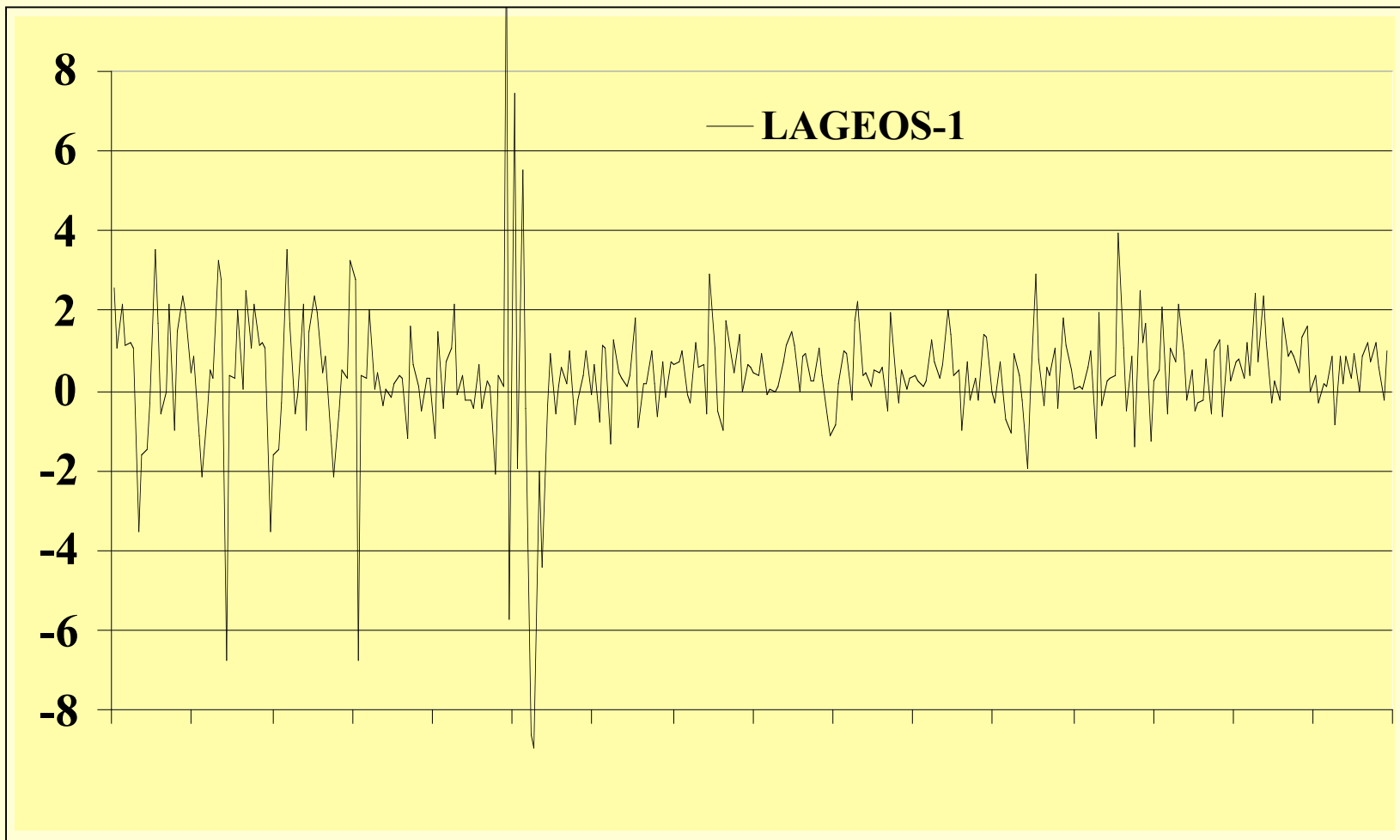
Yarragadee time bias information



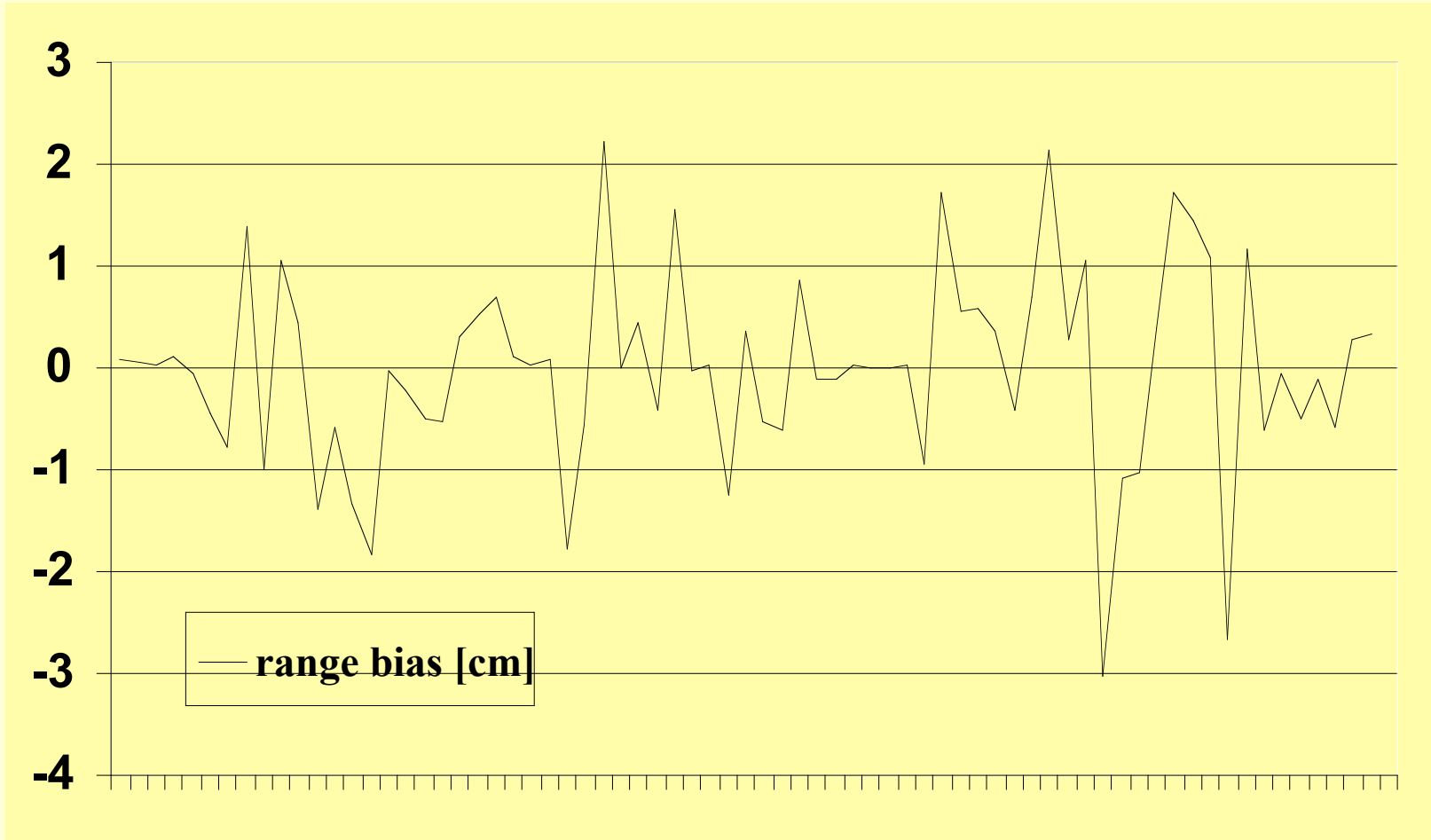
Yarragadee number of observations



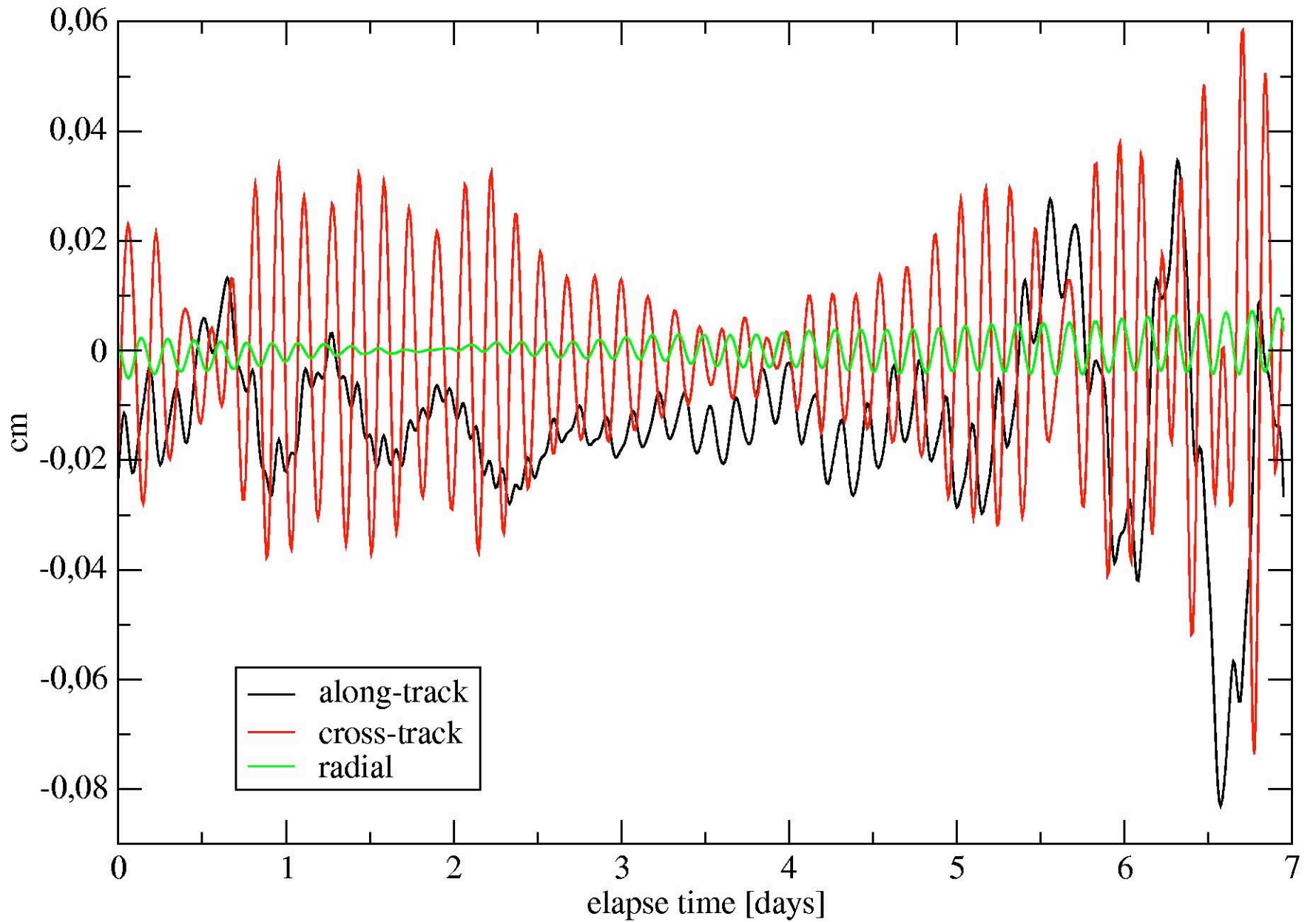
Riyad range bias



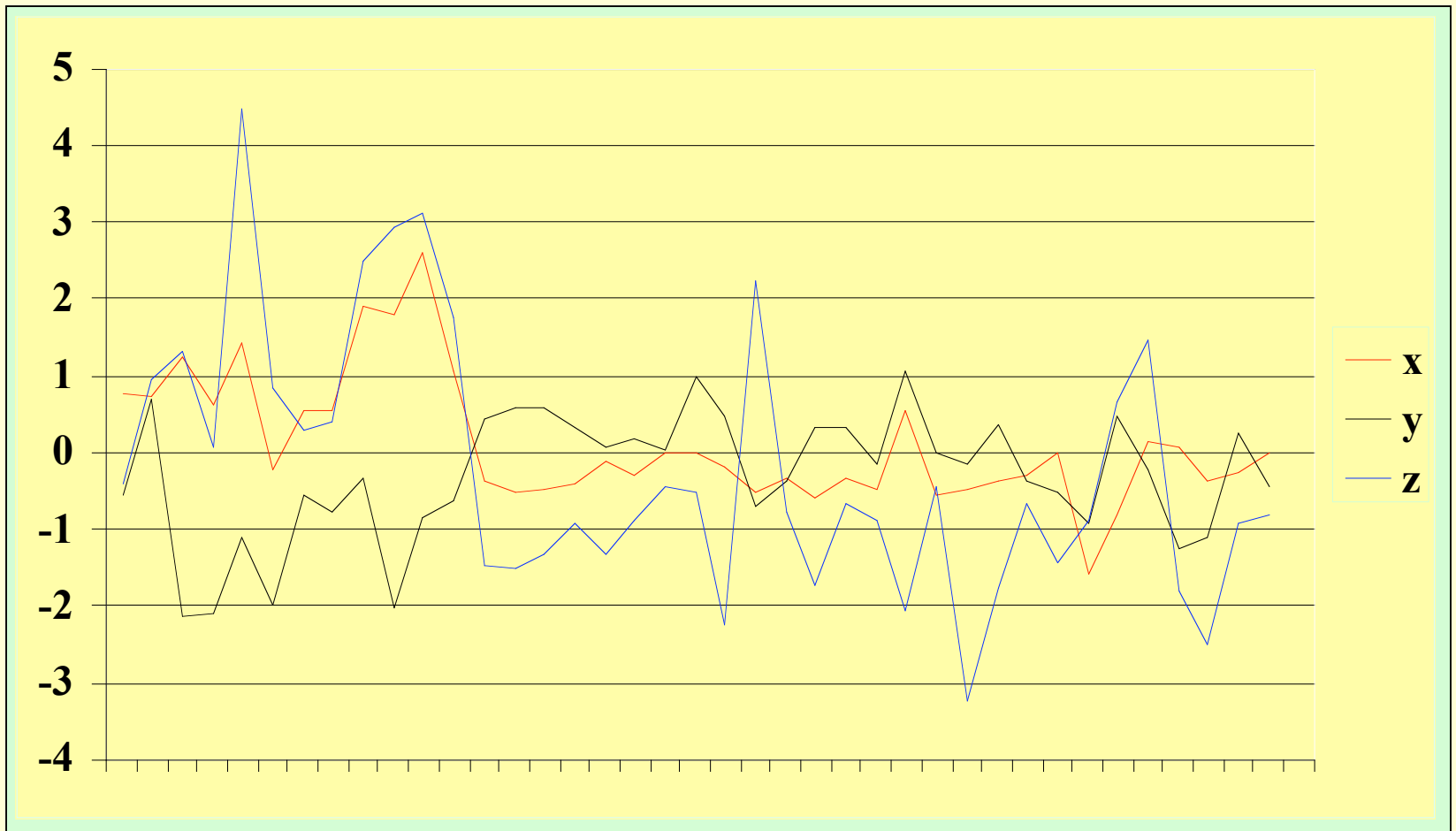
San Fernando range bias information



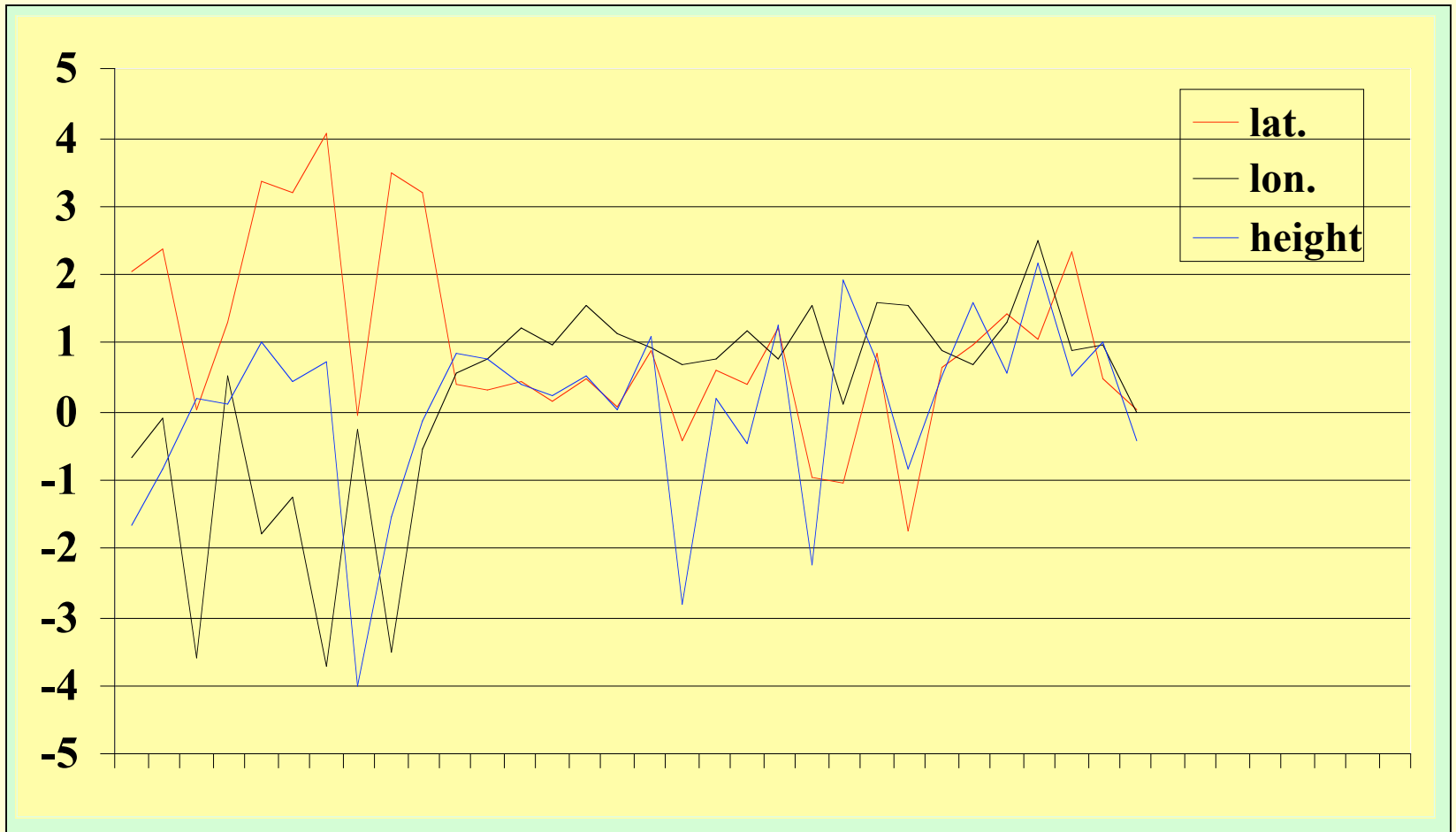
Lageos1 week 1272



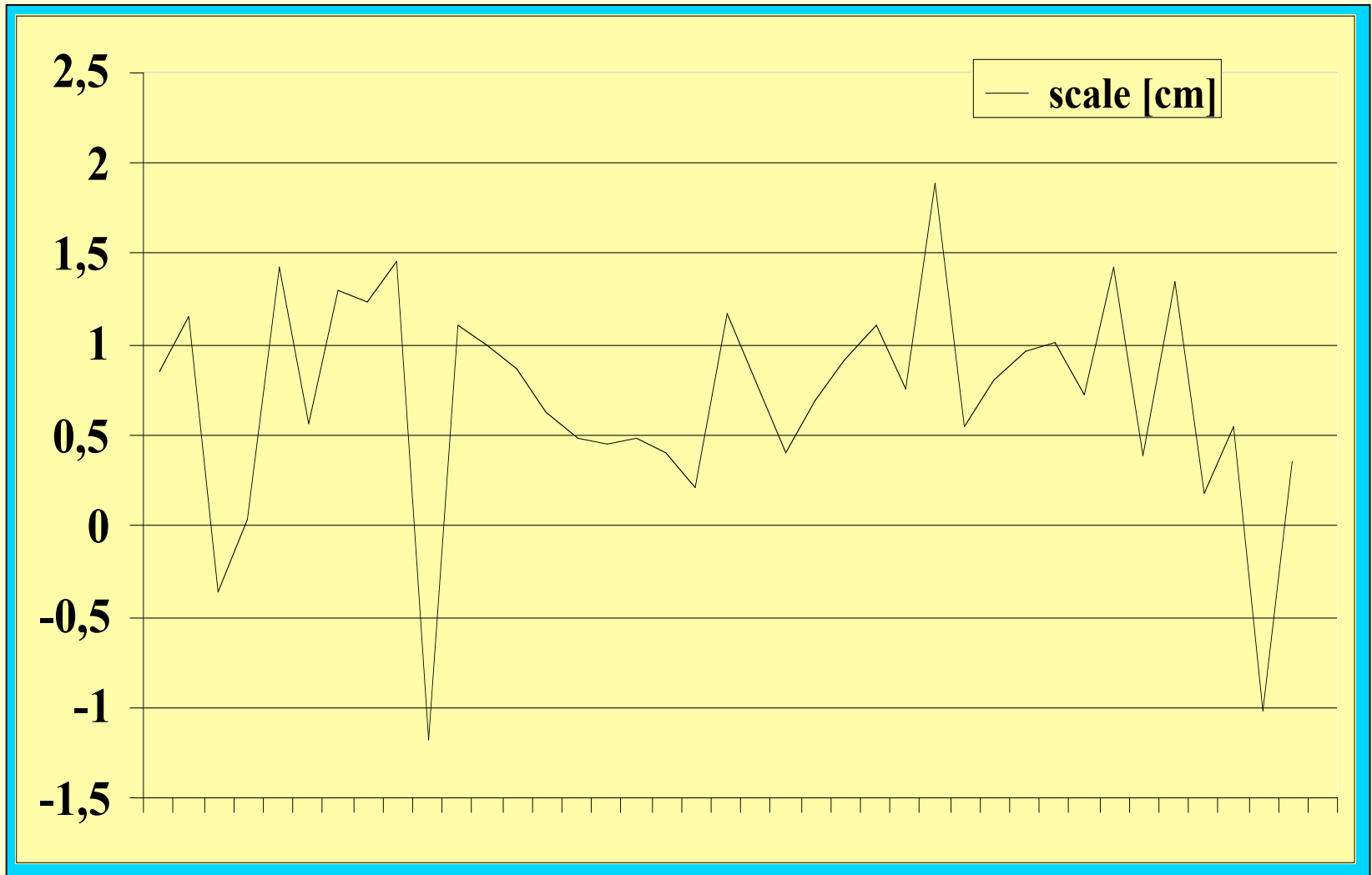
Similarity transformation parameters with respect to ITRF2000 in cm



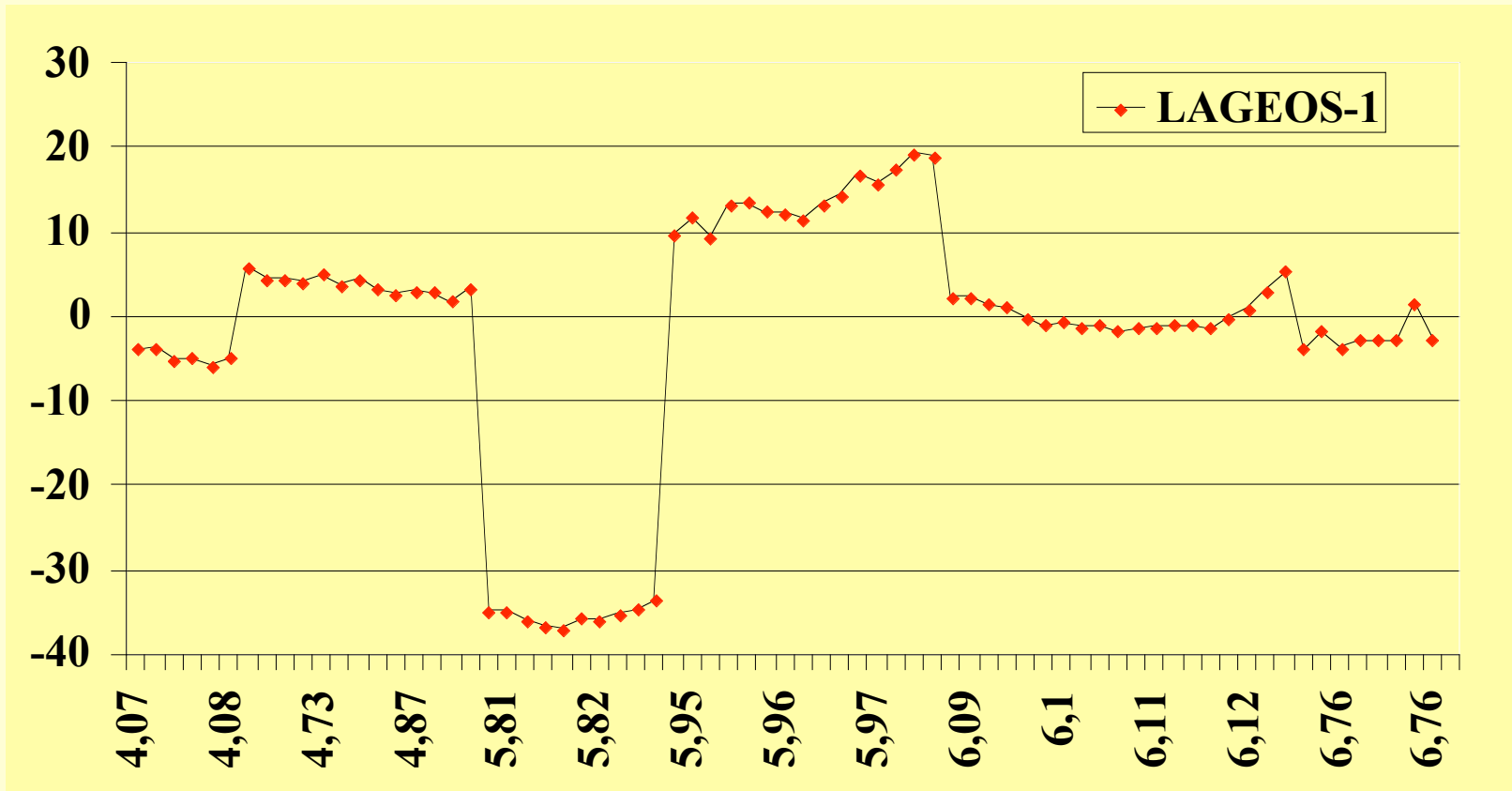
Yarragadee station position time series



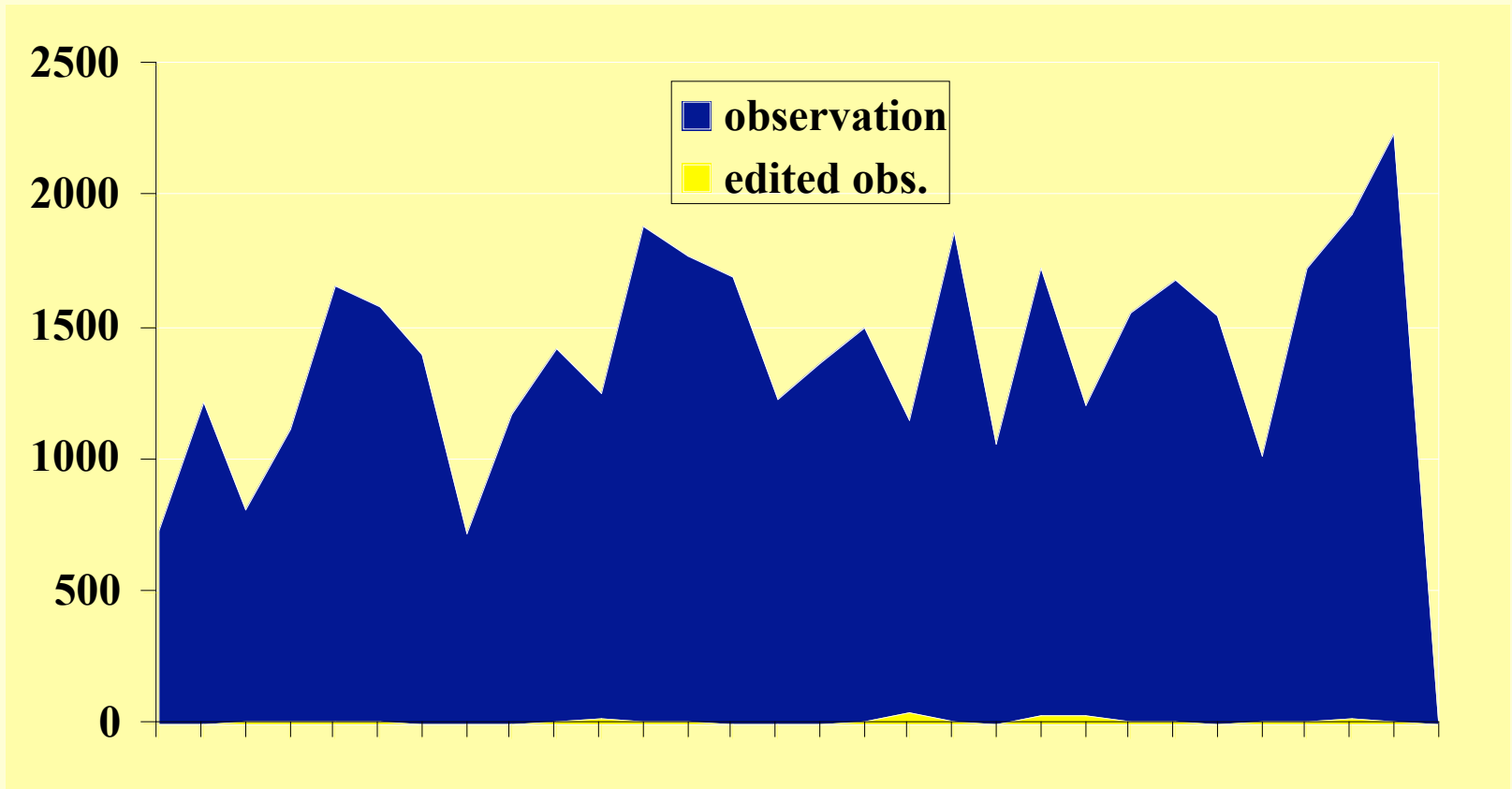
Scale variations in cm



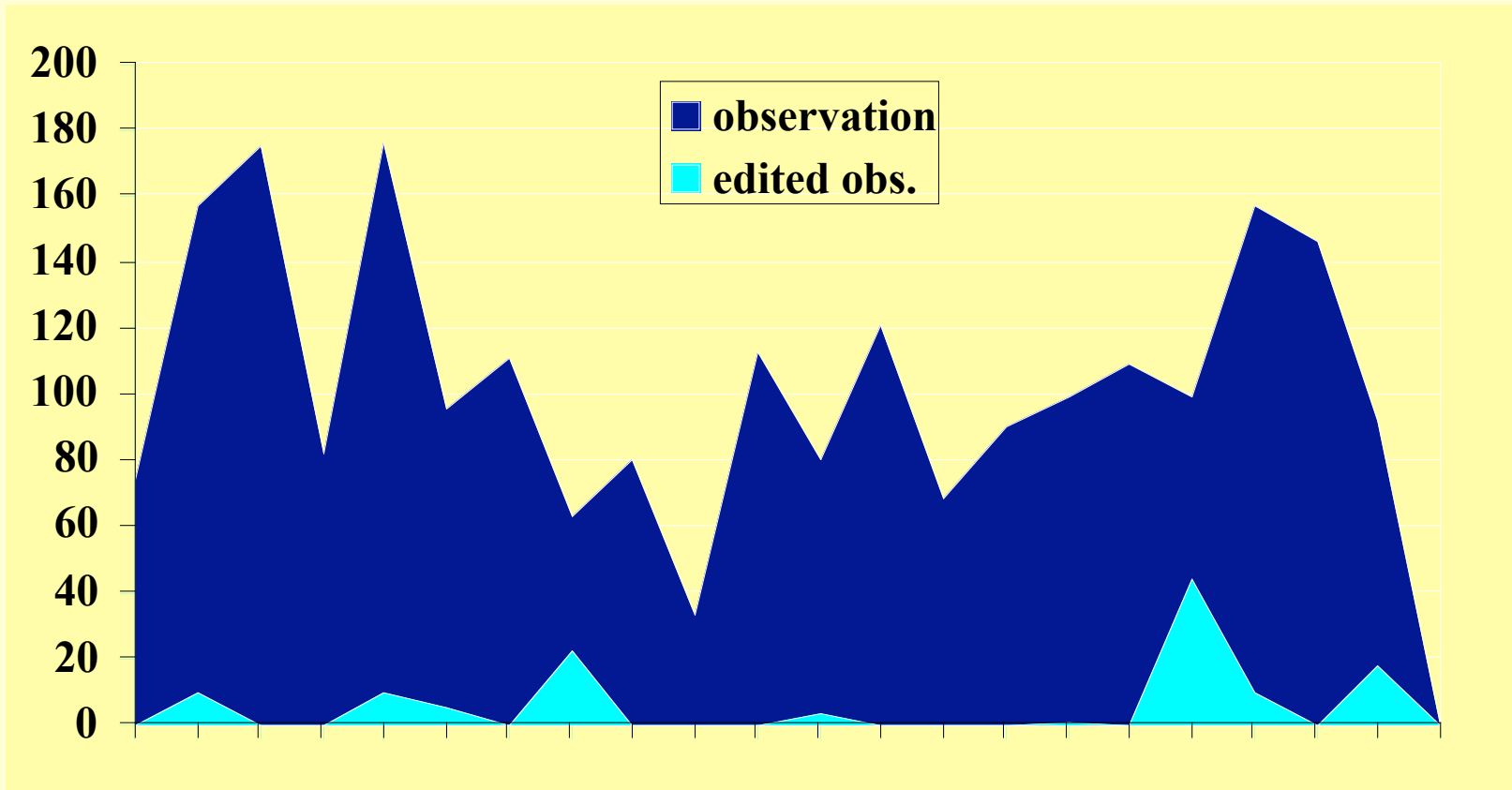
Riga range residuals [cm]



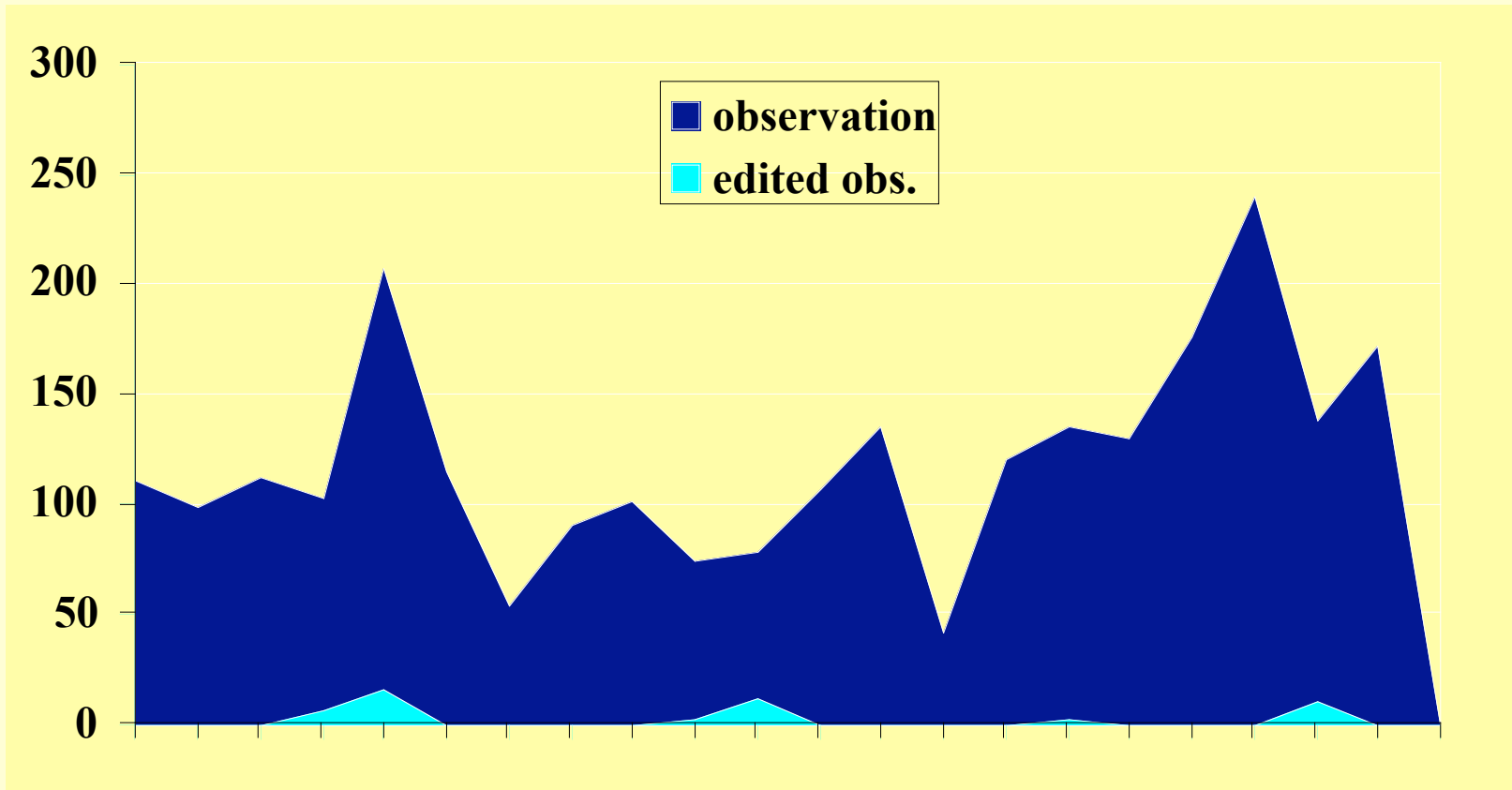
LAGEOS-1 SLR data



ETALON-1 SLR data



ETALON-2 SLR data



Conclusion

- Present data quality is very good
- Only a few significant biases
- Incorrect data should be replaced more rapidly, if possible.

Bias reports are available from

➤ <http://ilrsac.dgfi.badw.de/>