IBGE
Instituto Brasileiro de Geografia e Estatística

Atividades do Centro de Processamento IBGE

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Reunião do WG I - Projeto SIRGAS

Rio de Janeiro, Brasil, 16 a 18 de agosto 2006

Overview

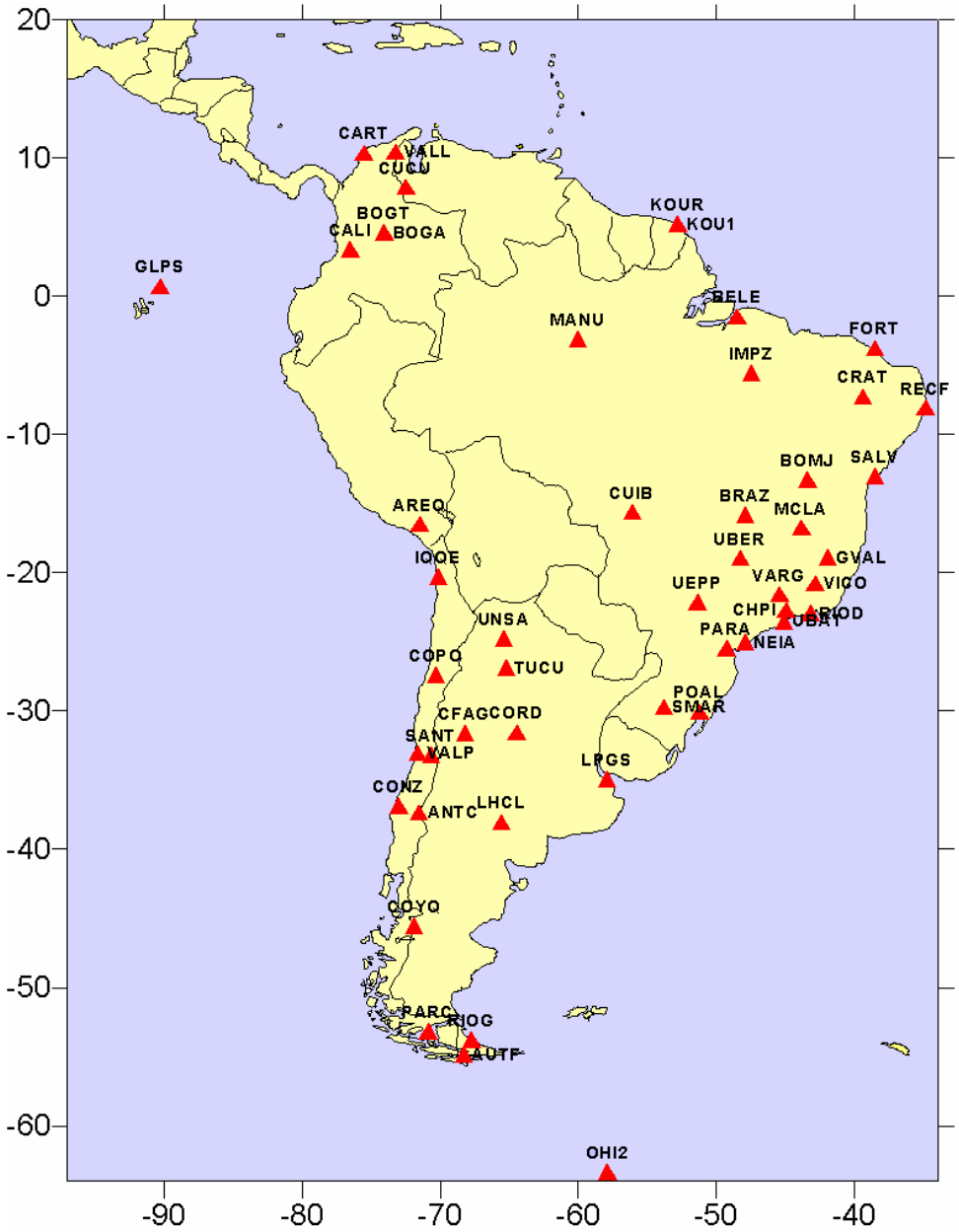
- Data processed from january 2003 to july 2006 – 1199 to 1381 GPS week
- 69 stations (from 2003 to 2006 - july)
- Software: Bernese 5.0 – BPE
- Data download and uncompression: automatically by ftp script

Preliminary report:

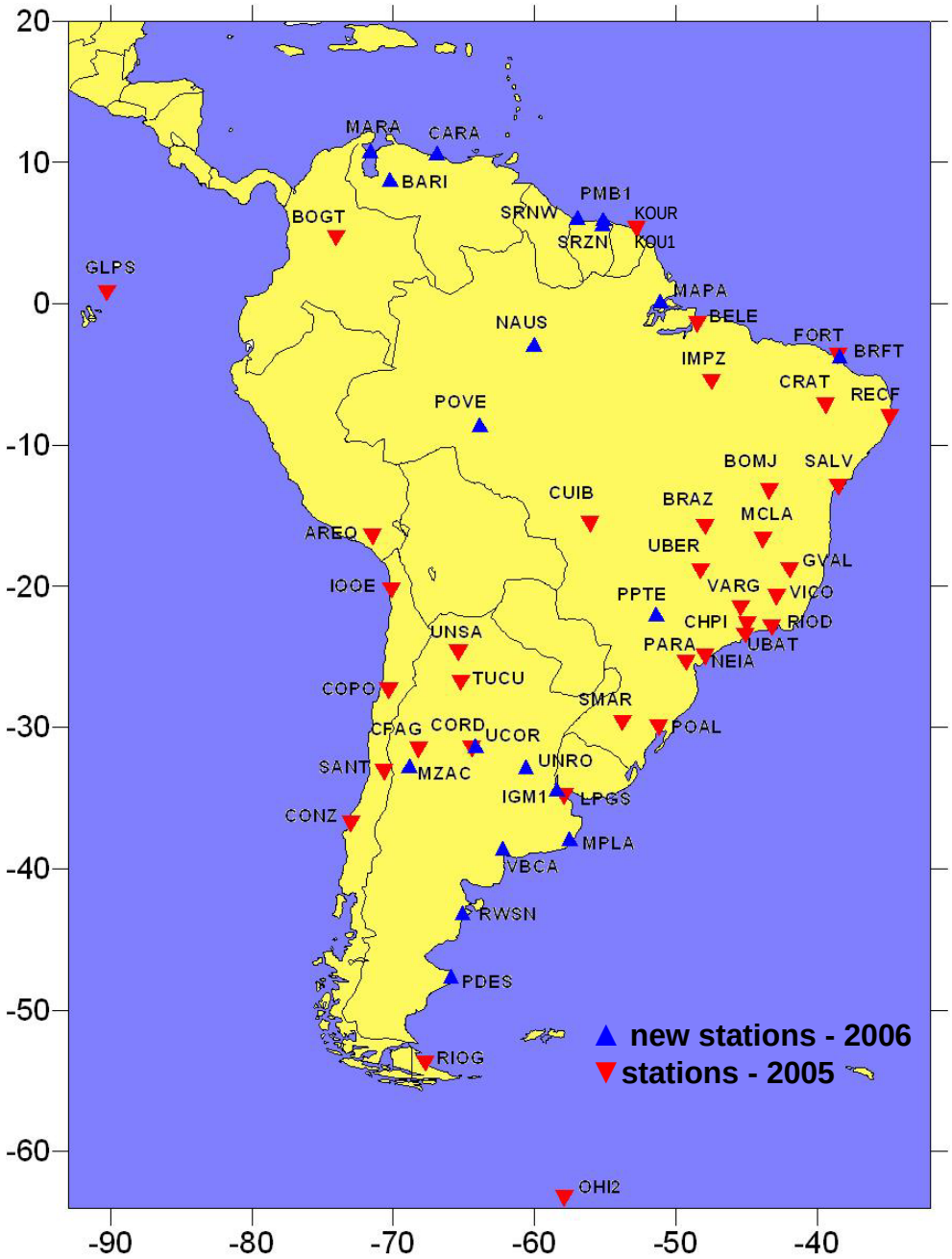
- Map of network
- Receivers and antennae of GPS stations
- Main options of IBGE processing
- PCF file used on daily processing
- PCF file used on week processing
- Data processing collection
- Residual analysis(IBGE X DGFI X IGb00 X SIRGAS2000)
- Time series (relative and absolute antenna phase center variation)

MAP OF IBGE NETWORK

Stations processed from 2003 to 2005



NEW STATIONS - 2006



NEW - 19 STATIONS

- VENEZUELA: BARI, CARA, MARA
- SURINAME: PMB1, SRNW, SRZN
- BRASIL: BRFT, MAPA, POVE, NAUS, PPTE
- ARGENTINA: IGM1, MPLA, MZAC, PDES, RWSN, UCOR, UNRO, VBCA

OUT OF OPERATION

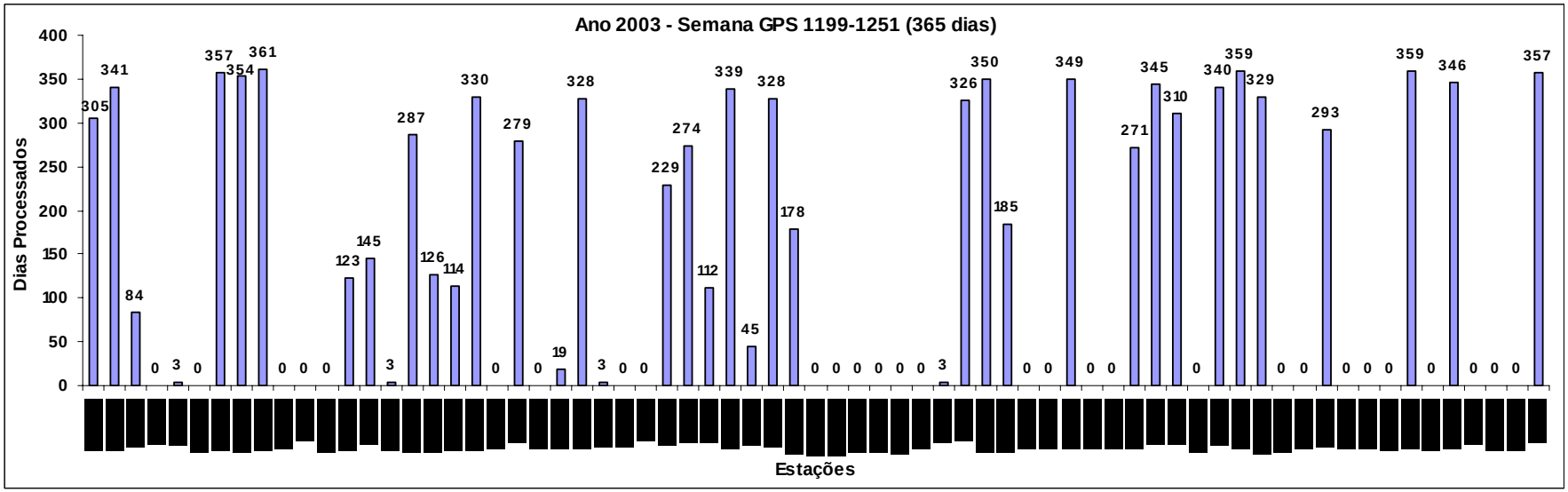
- CHILE: ANTC, COYQ
- ARGENTINA: PARC, VALP, TUCU, LHCL, AUTF
- BRASIL: MANU, UEPP, FORT

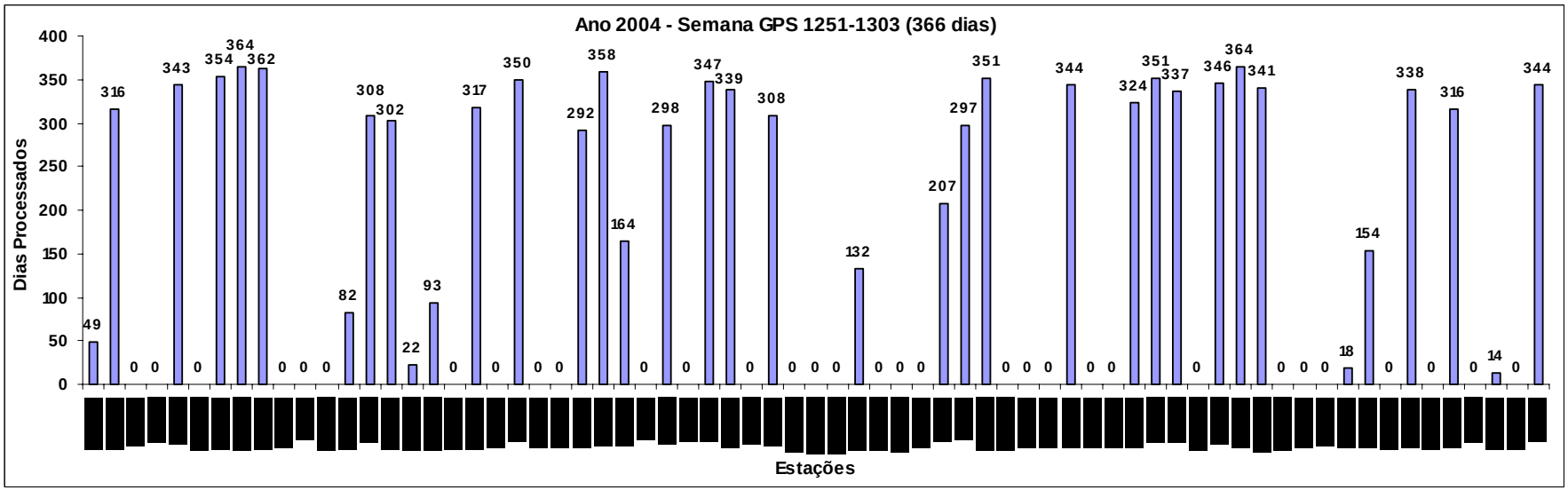
July of 2006 - Amount of current stations: 51

MAIN CHARACTERISTICS OF IBGE PROCESSING

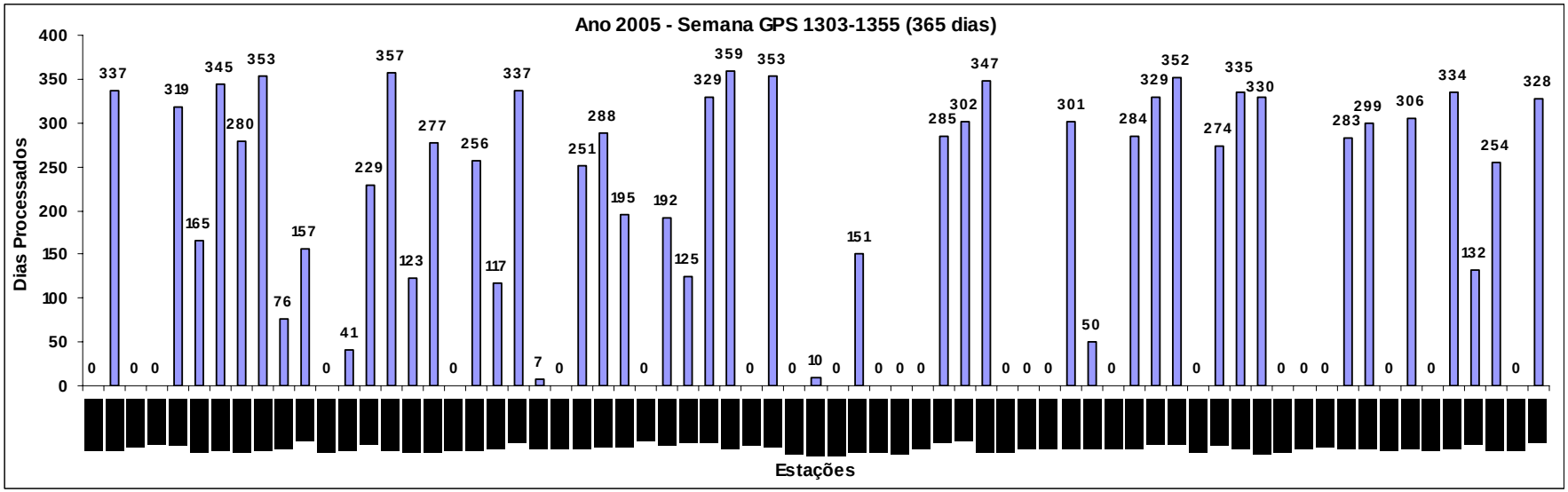
Start of processing	January 2003
Software used	Bernese 5.0 (BPE mode)
Sampling rate	30 sec for 1 day solution
Elevation cutoff	10 °
Baselines strategy	SHORTEST
Observations weighting	cos(zenithal)
Orbits/EOP	IGS final referred to IGS00
A priori Troposphere model	Niell dry component
Troposphere	Zenith delay estimated each 2 hours(12 daily corrections p/station) A priori sigmas applied with respect to prediction model Niell(wet component) -first parameter +/- 5 m absolute and +/- 5 cm relative
Ambiguities	QIF strategy with Ionosphere maps from IGS
Ocean tide model	GOT00.2
Daily solution	NEQ files, minimum constraint solution BRAZ (ITRF2000 coordinates) OUTPUT: SINEX files Troposphere maps
Week solution	SINEX files and NEQ accumulated from daily solutions to create week solutions. Constrained in 4 stations (BRAZ, LPGS, RIOG and SANT) without troposphere parameters.

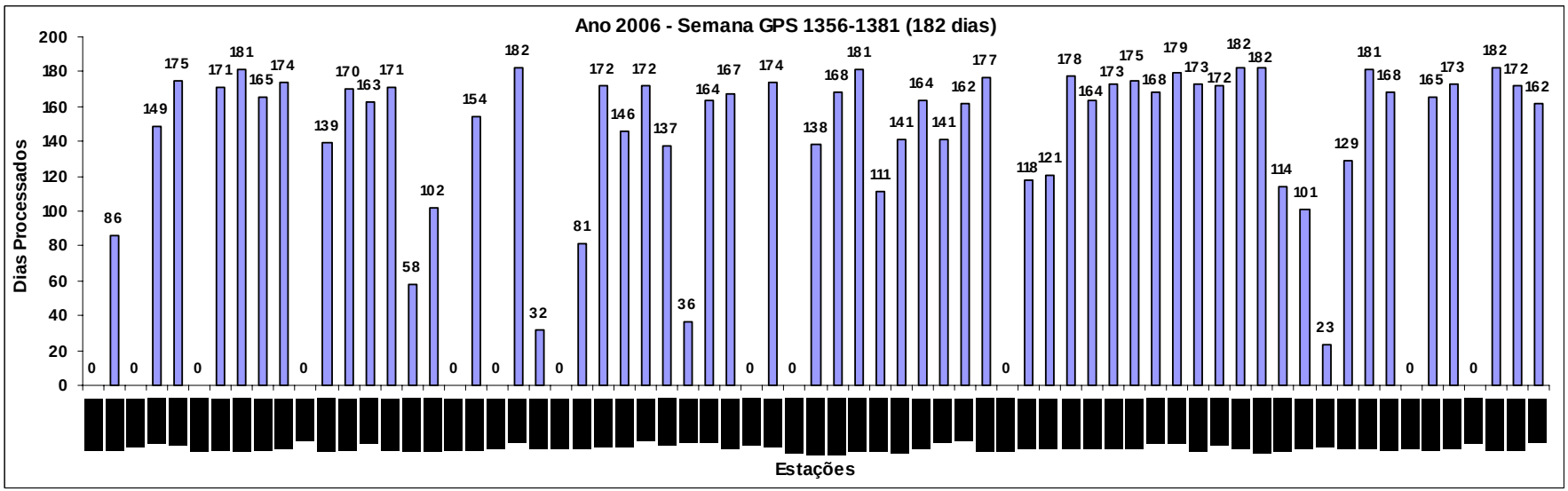
DATA PROCESSING COLLECTION – 1 of 3



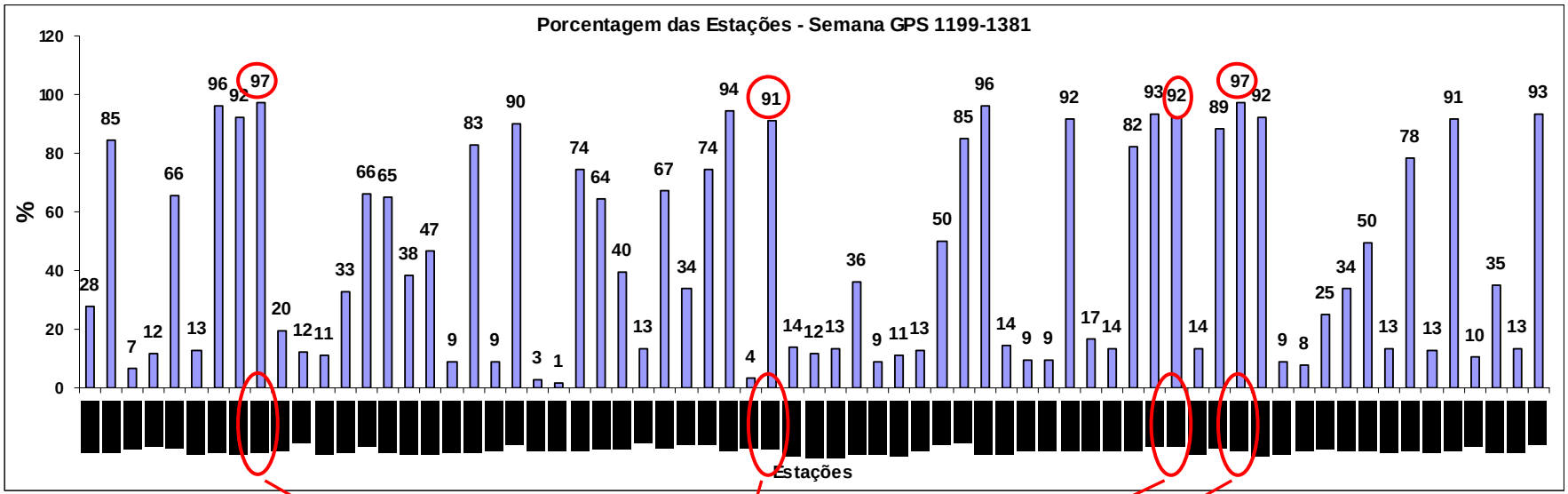


DATA PROCESSING COLLECTION – 2 of 3





DATA PROCESSING COLLECTION – 3 of 3

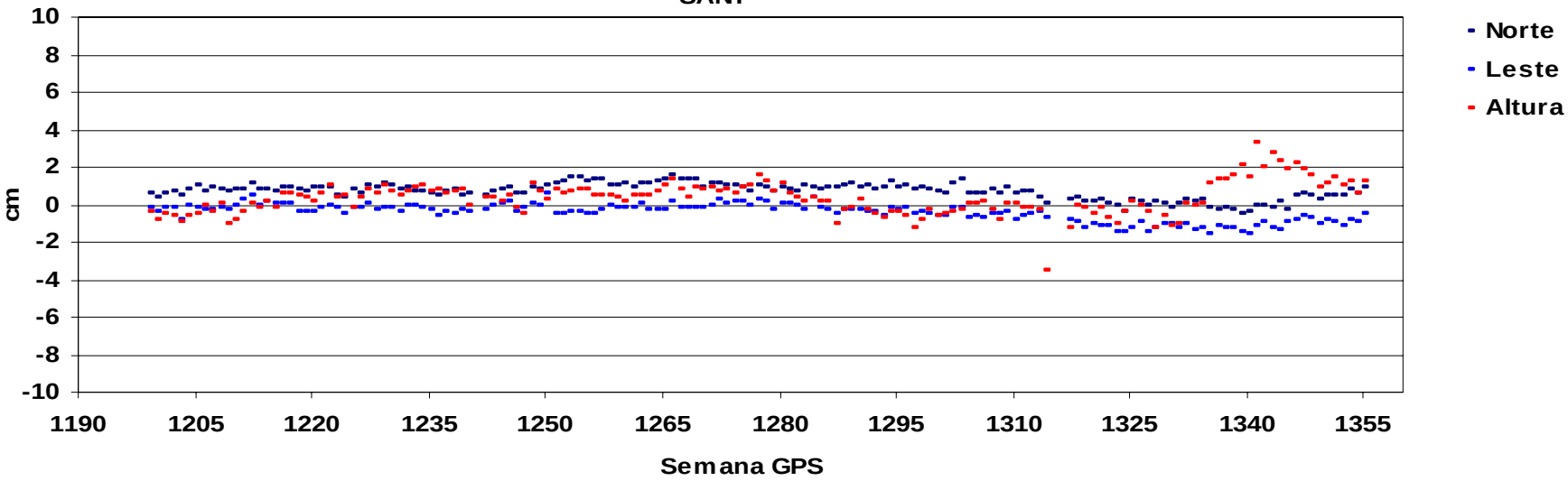


Constraints
Week Solutions:

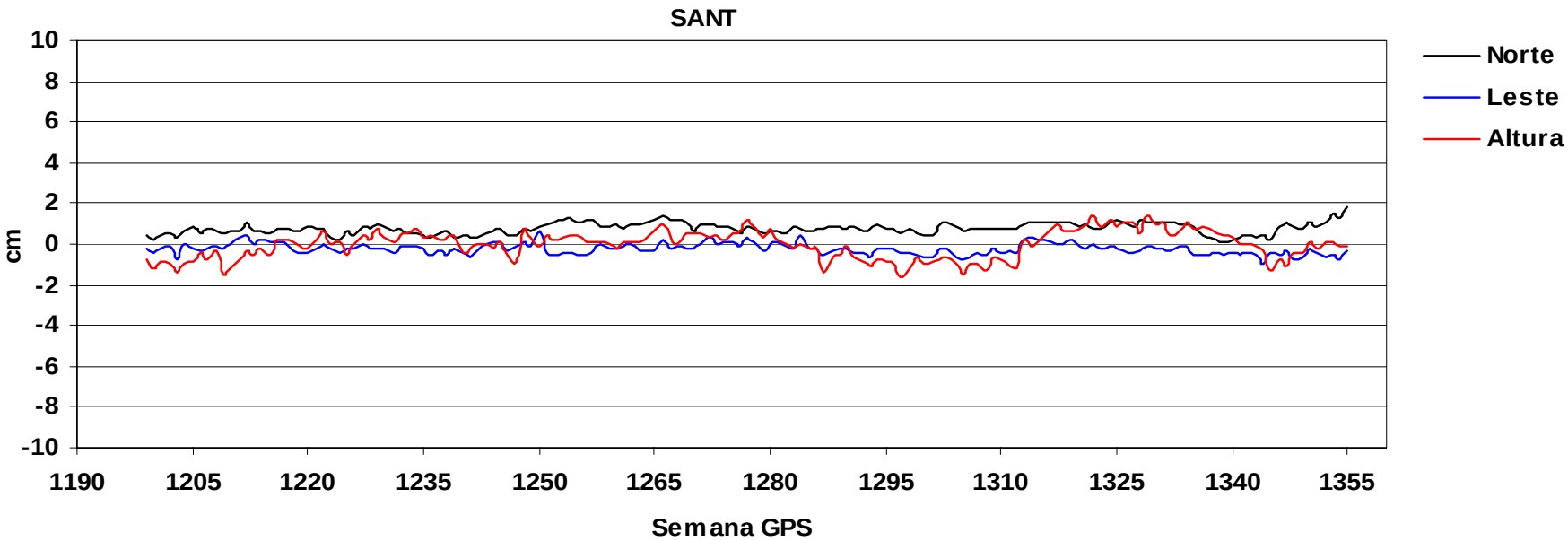
BRAZ:	97%
LPGS:	91%
RIOG:	92%
SANT:	97%

RESIDUALS at STATION - SANT

• IBGE X DGFI

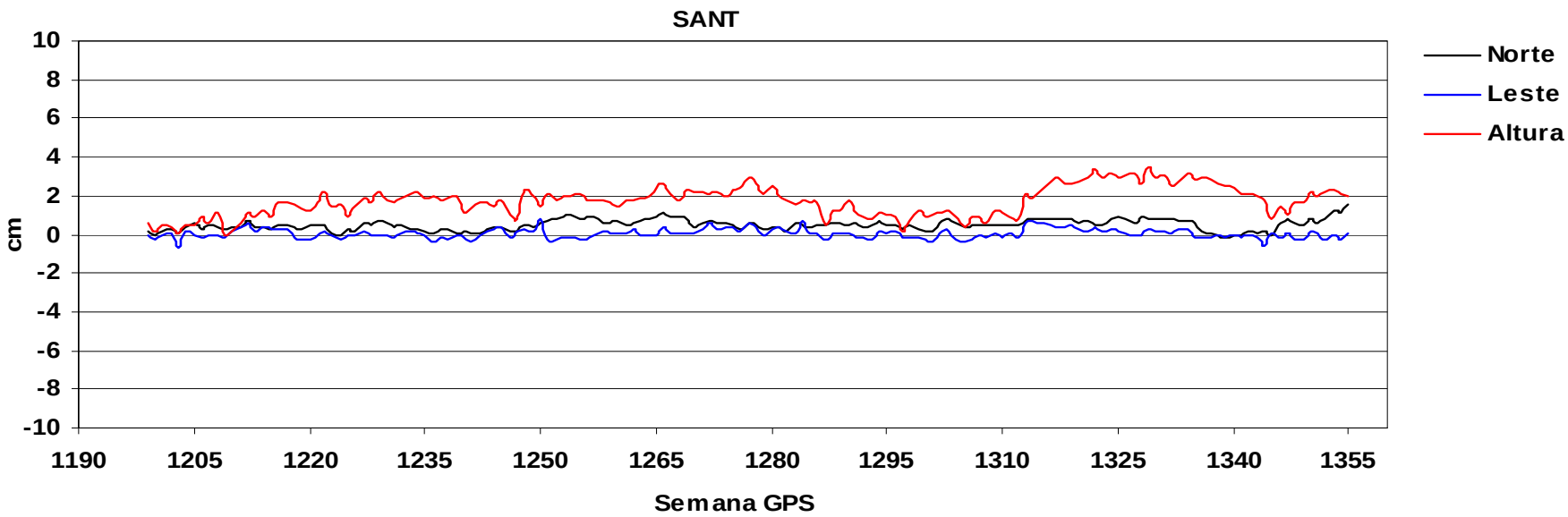


• IBGE X IGb00



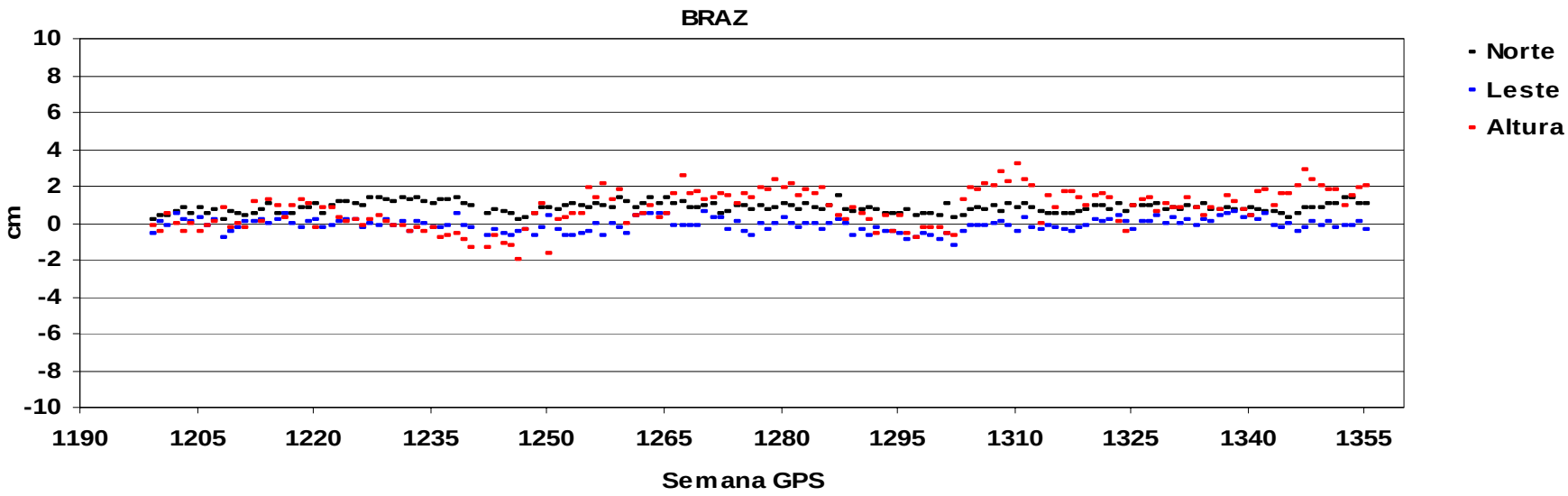
RESIDUALS at STATION - SANT

• IBGE X SIRGAS2000

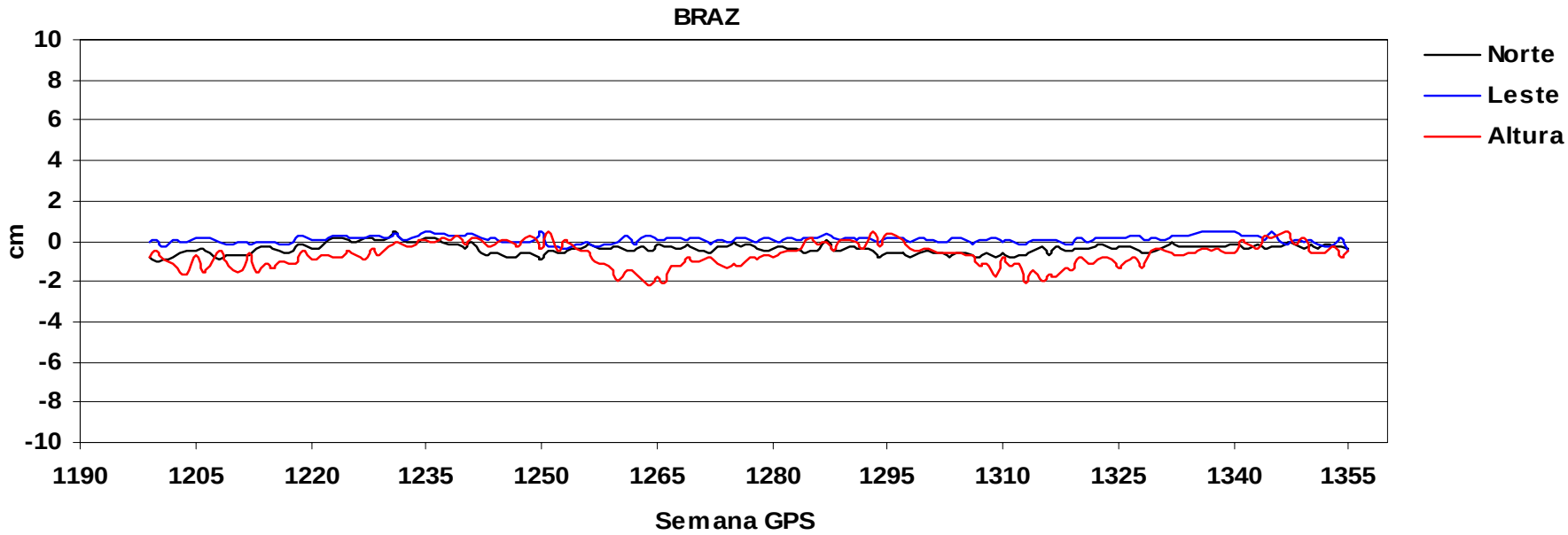


RESIDUALS at STATION - BRAZ

• IBGE X DGFI

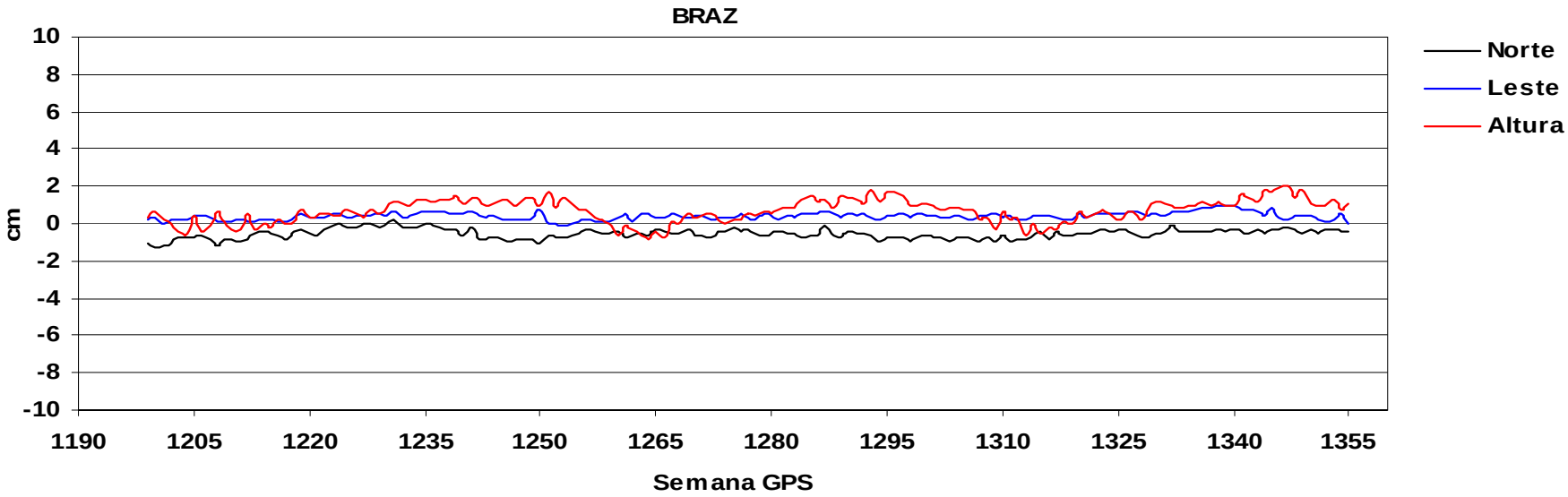


• IBGE X IGb00



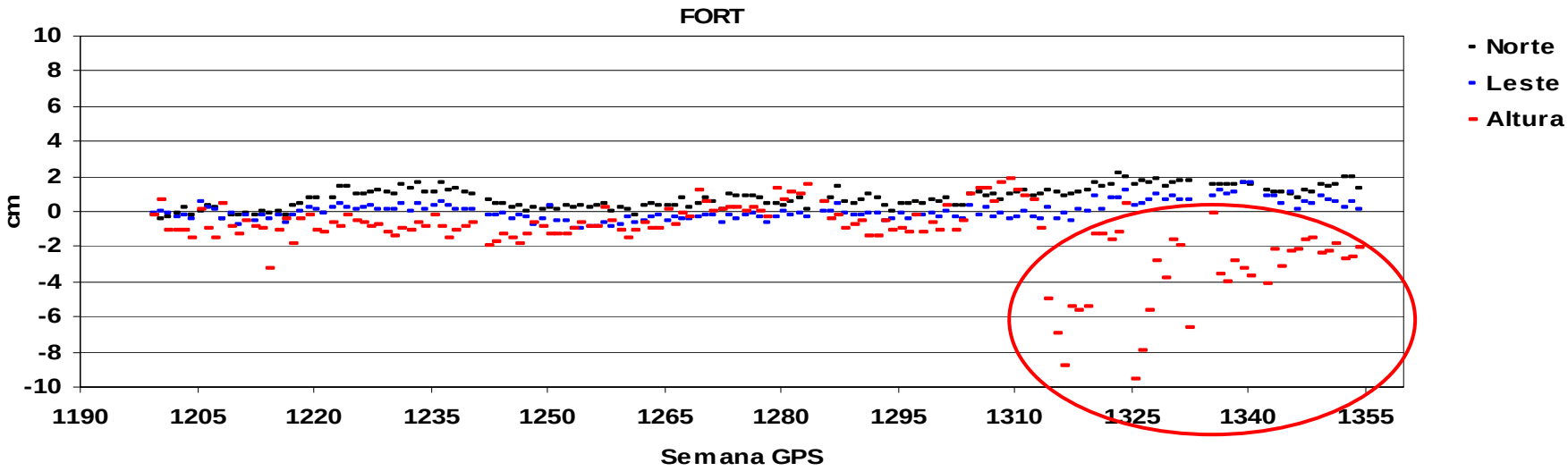
RESIDUALS at STATION - BRAZ

• IBGE X SIRGAS2000

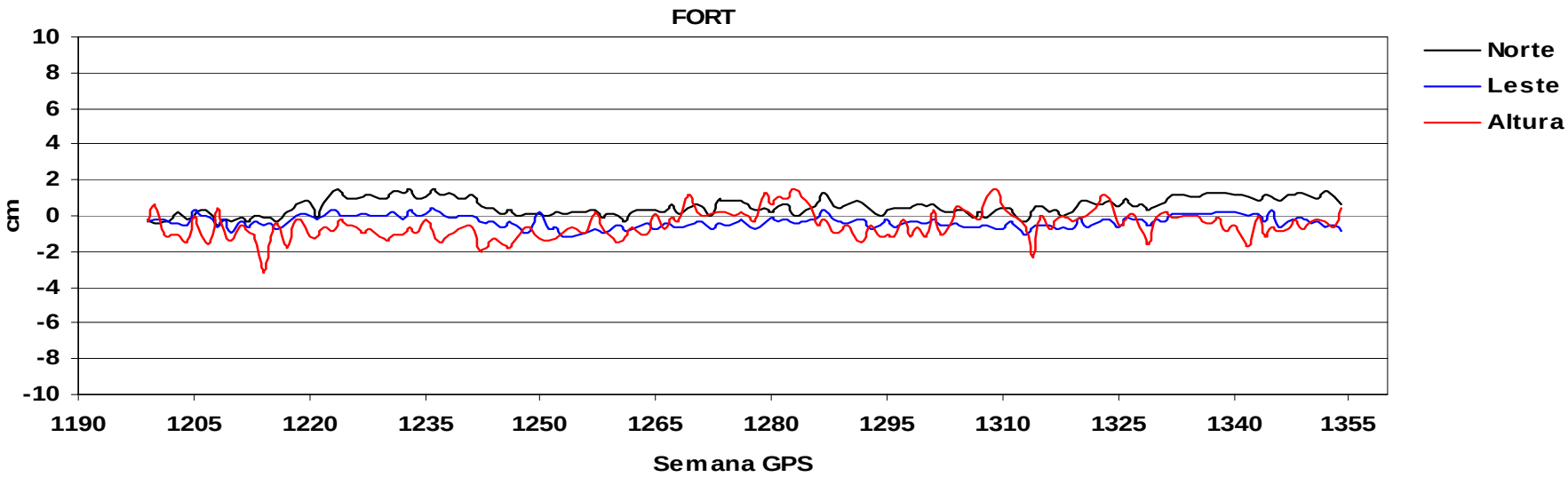


RESIDUALS at STATION - FORT

• IBGE X DGFI

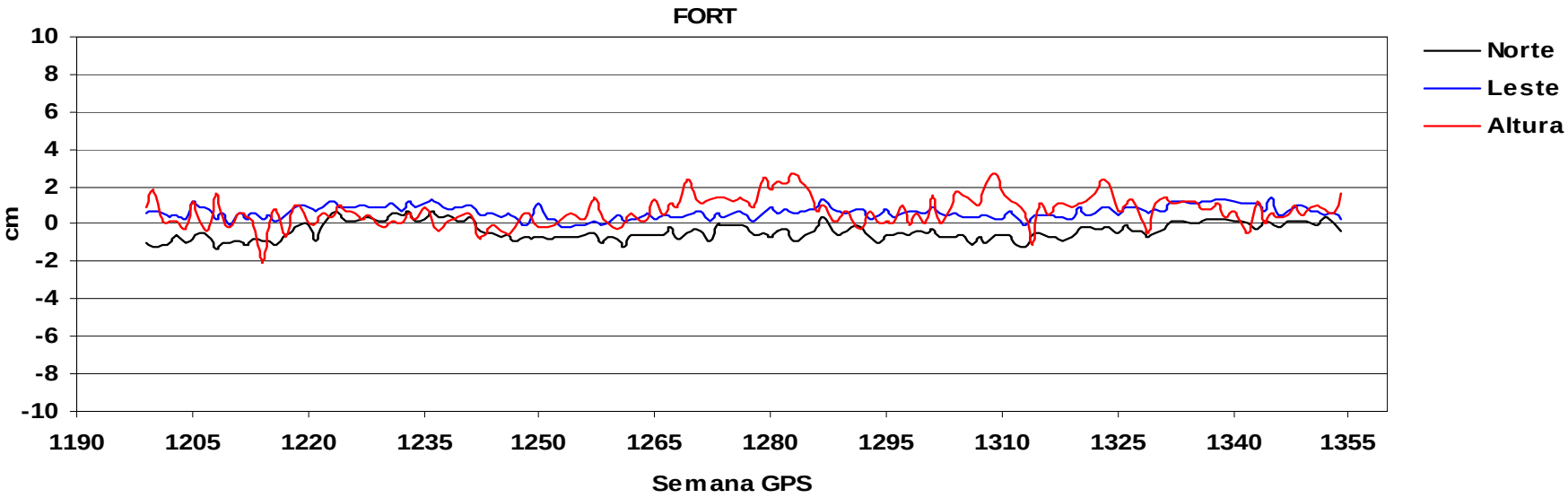


• IBGE X IGb00



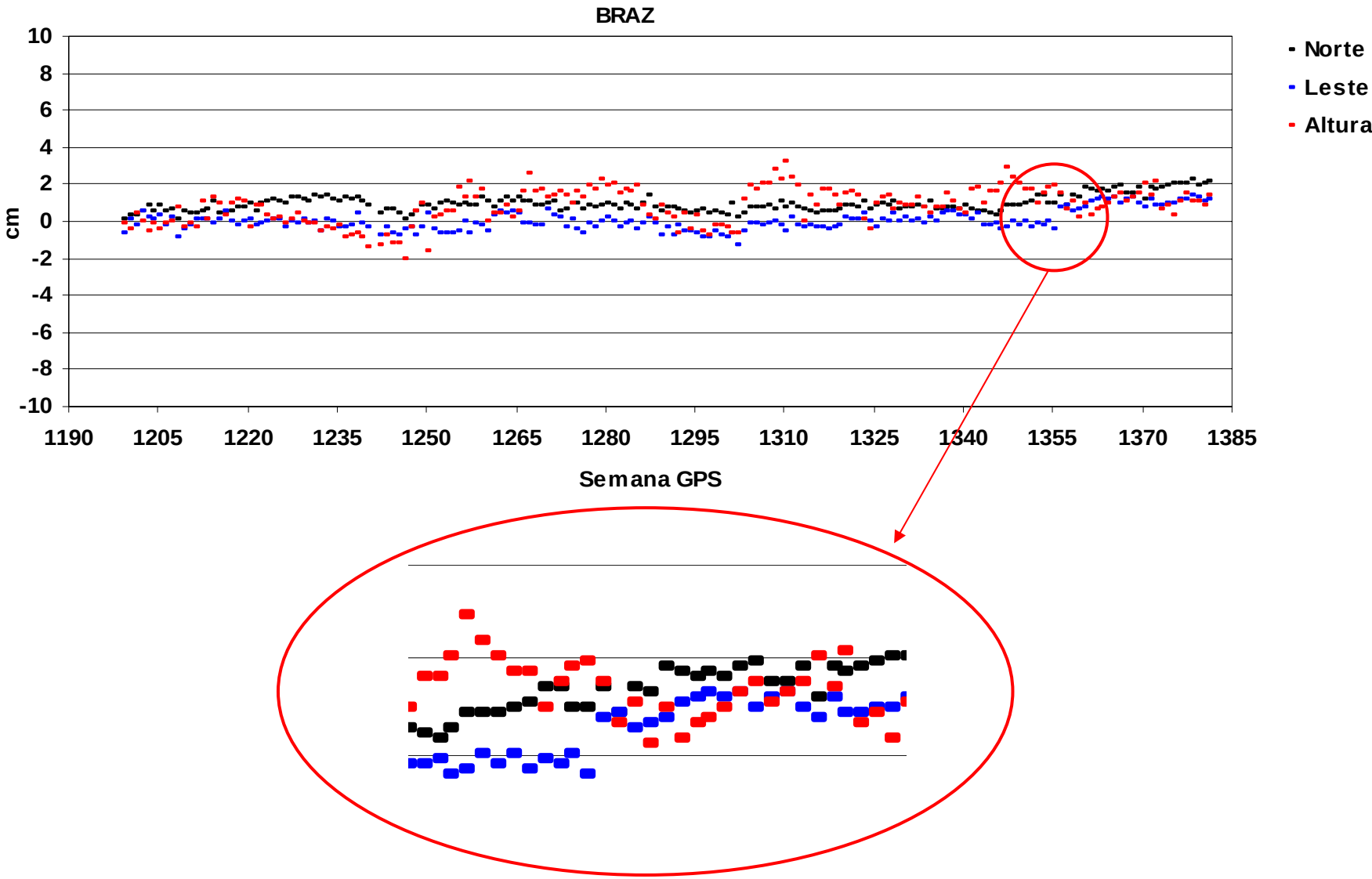
RESIDUALS at STATION - FORT

• IBGE X SIRGAS2000

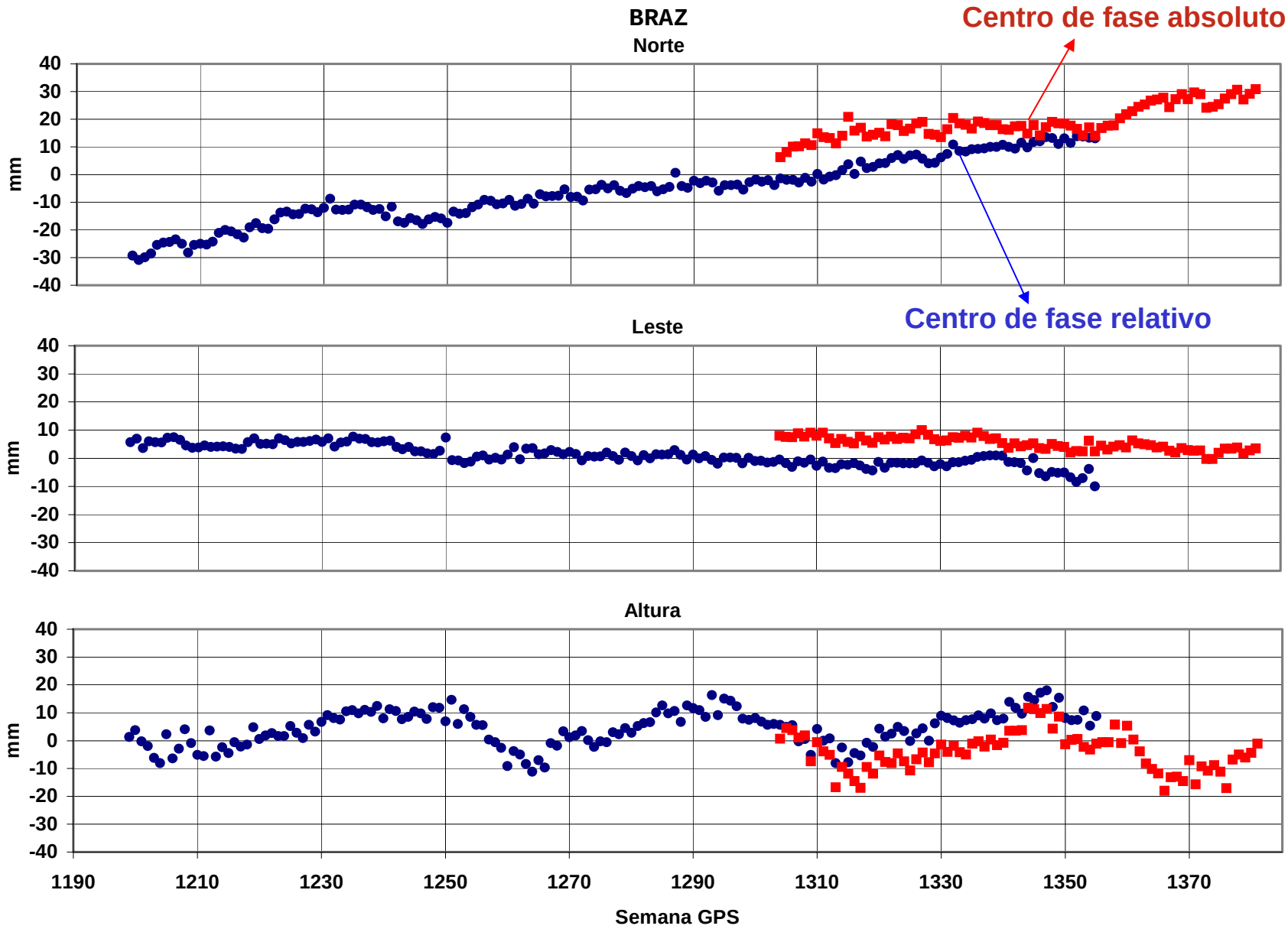


RESIDUALS at IBGE X DGFI

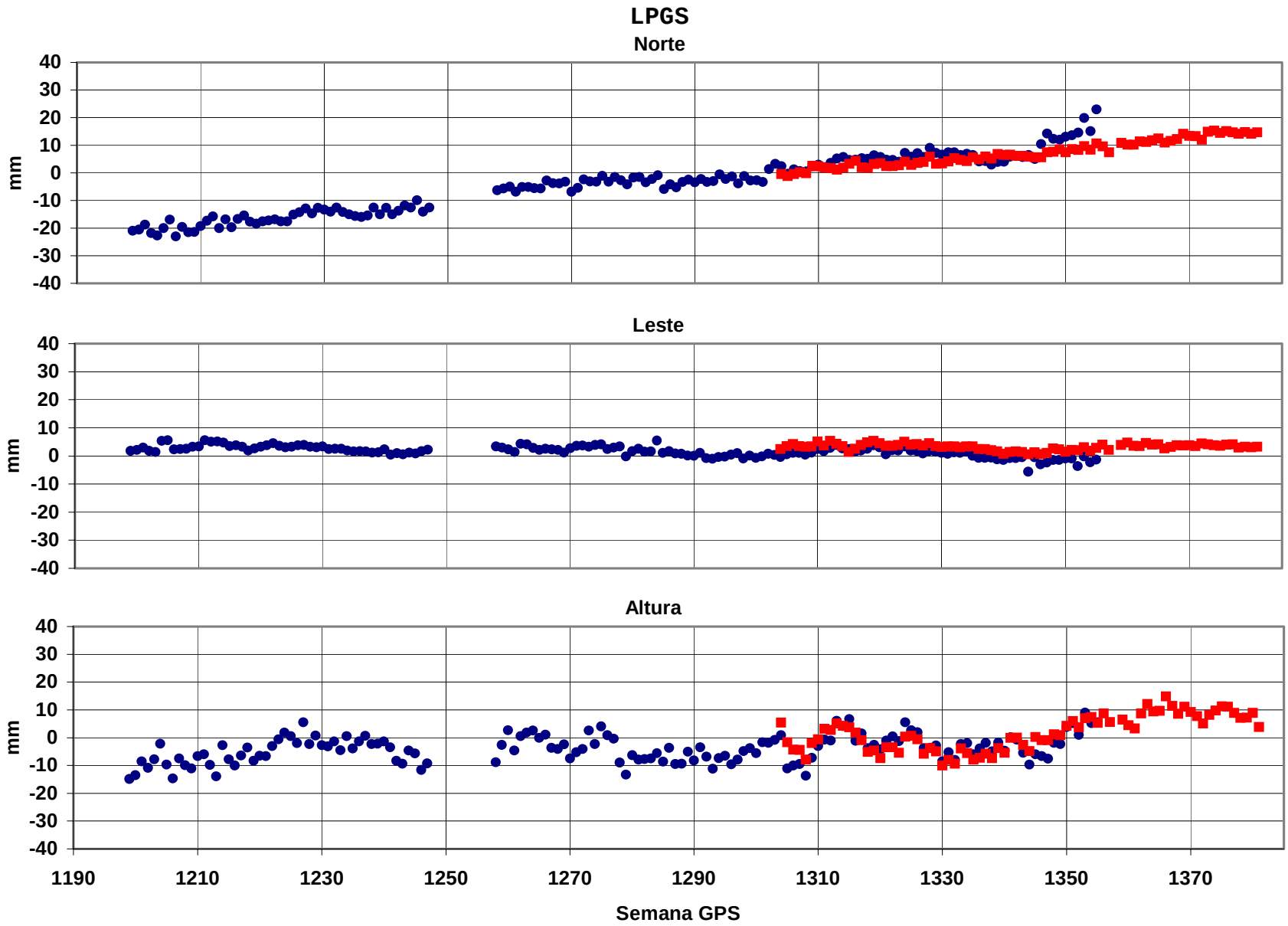
IBGE (RELATIVE) X DGFI (RELATIVE) – UNTIL 1355
IBGE (ABSOLUTE) X DGFI (RELATIVE - ?) – AFTER 1355



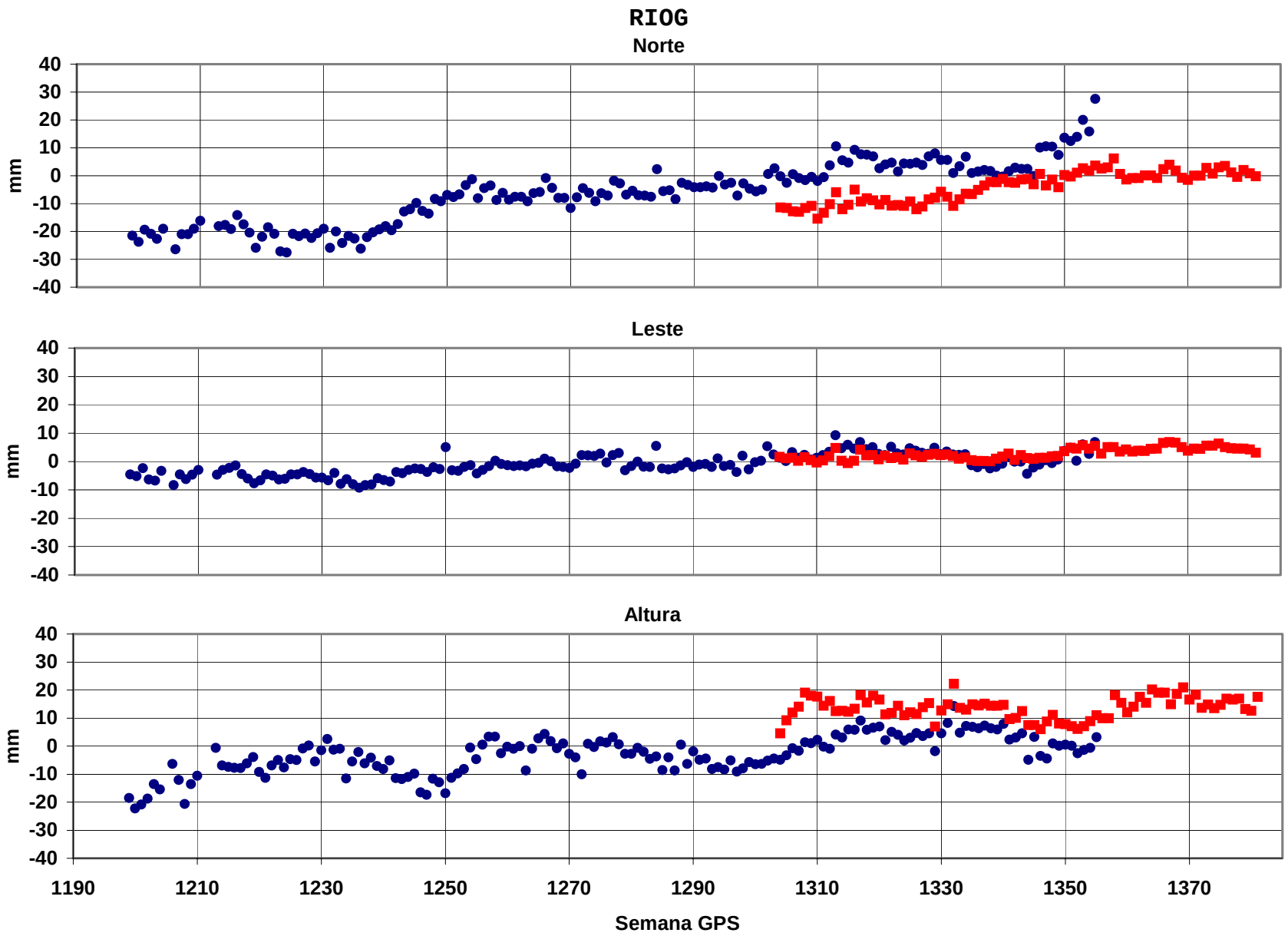
TIME SERIES - BRAZ



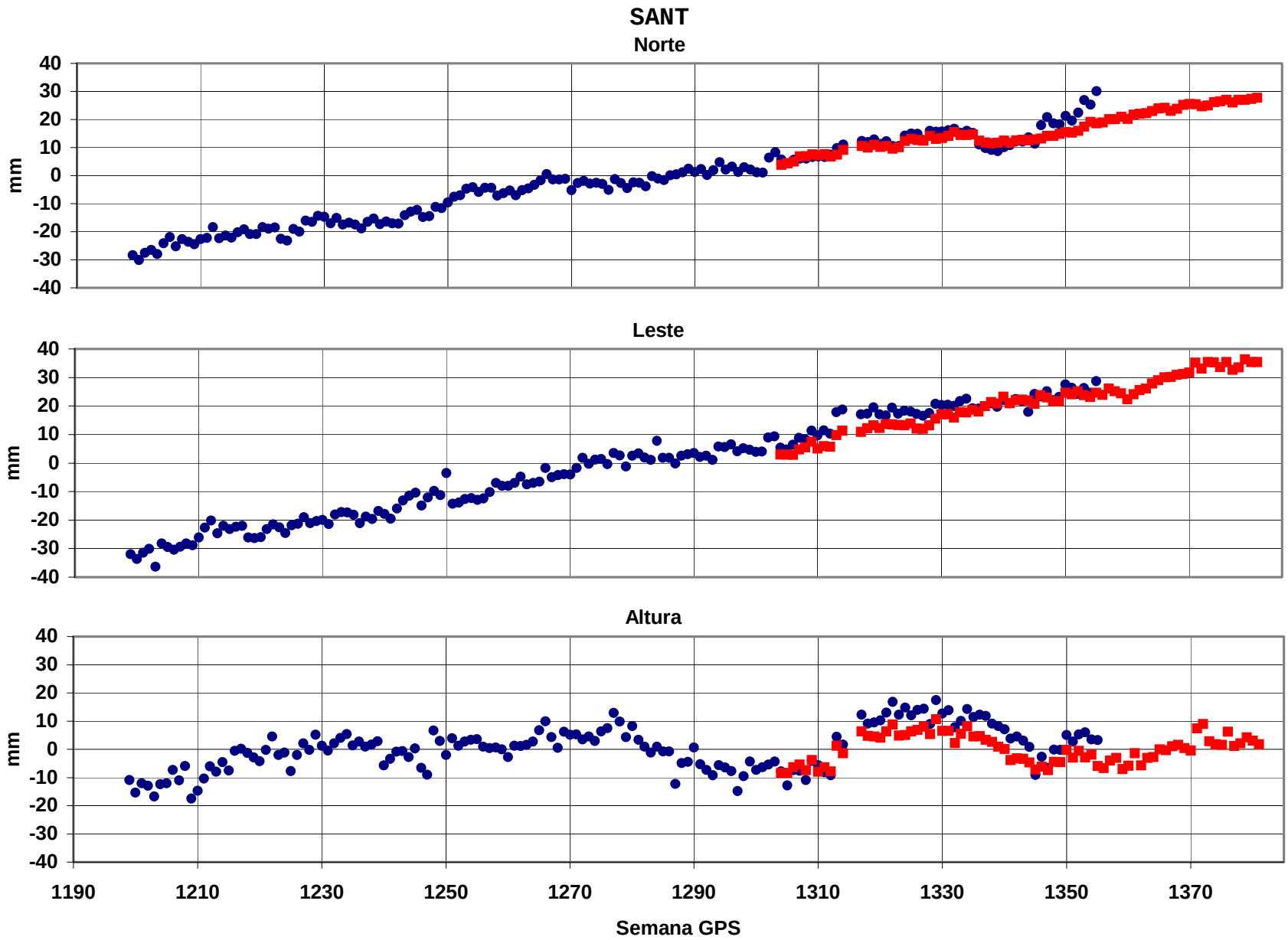
TIME SERIES - LPGS



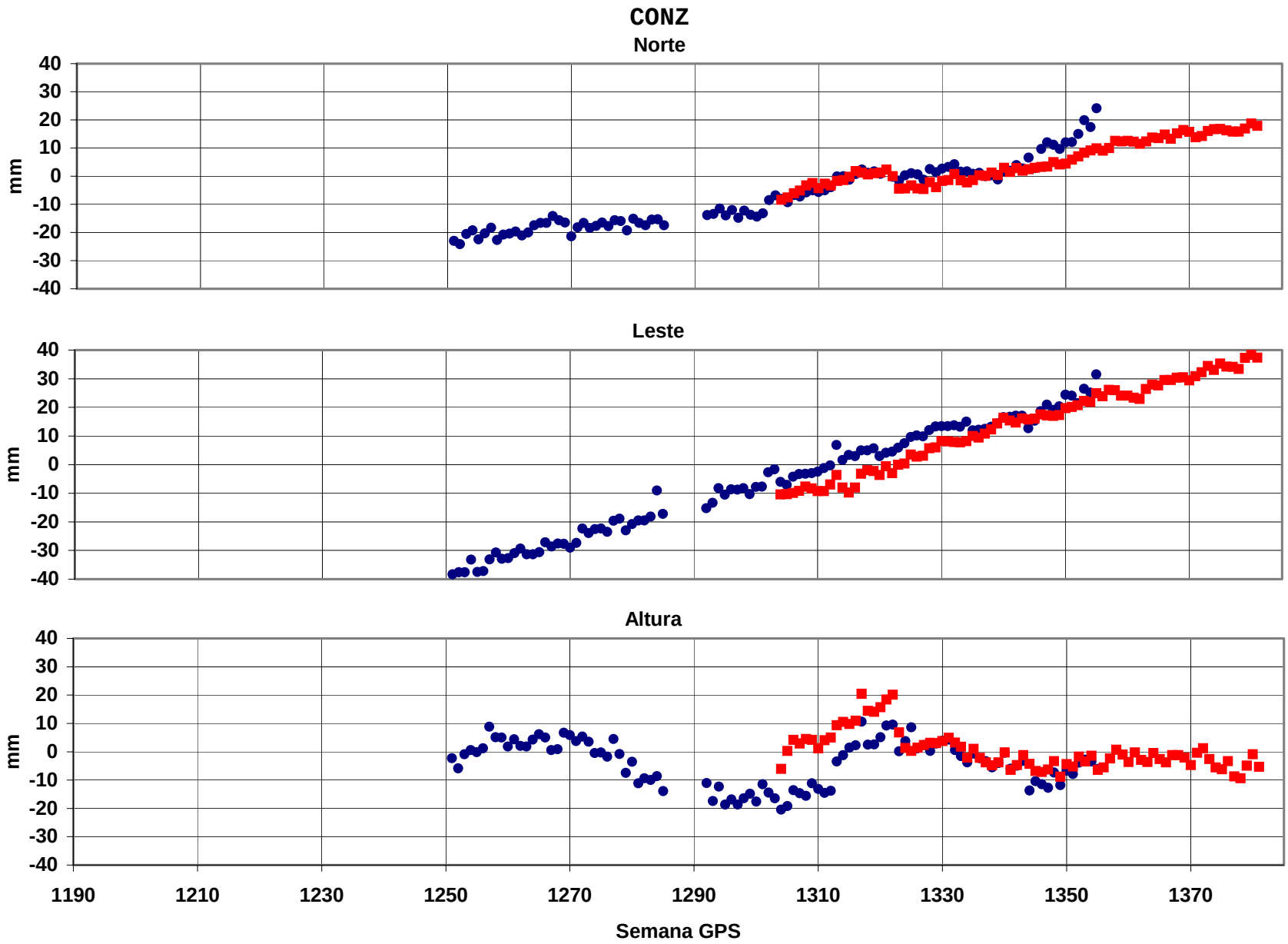
TIME SERIES – RIOG



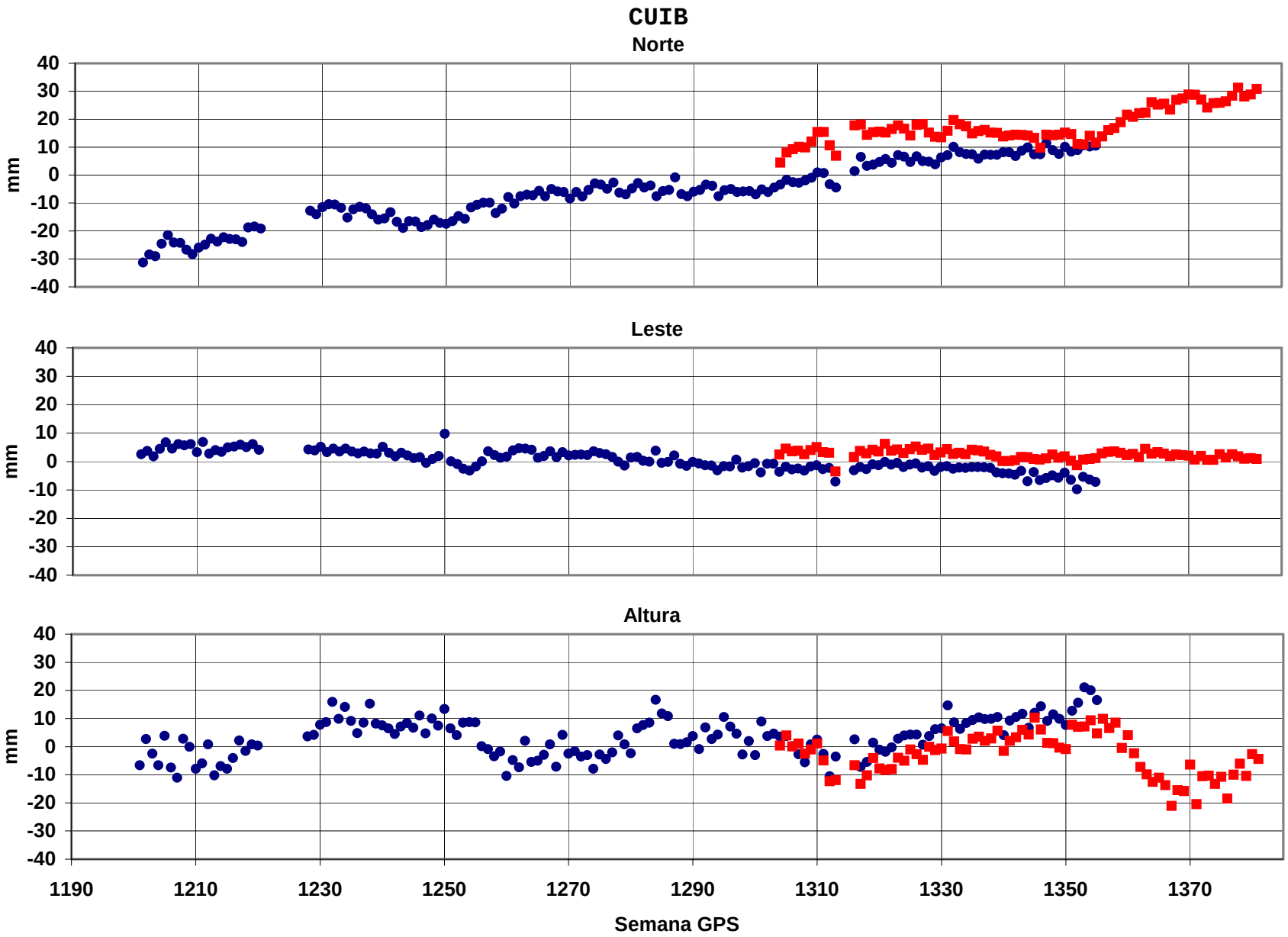
TIME SERIES - SANT



TIME SERIES - CONZ



TIME SERIES - CUIB



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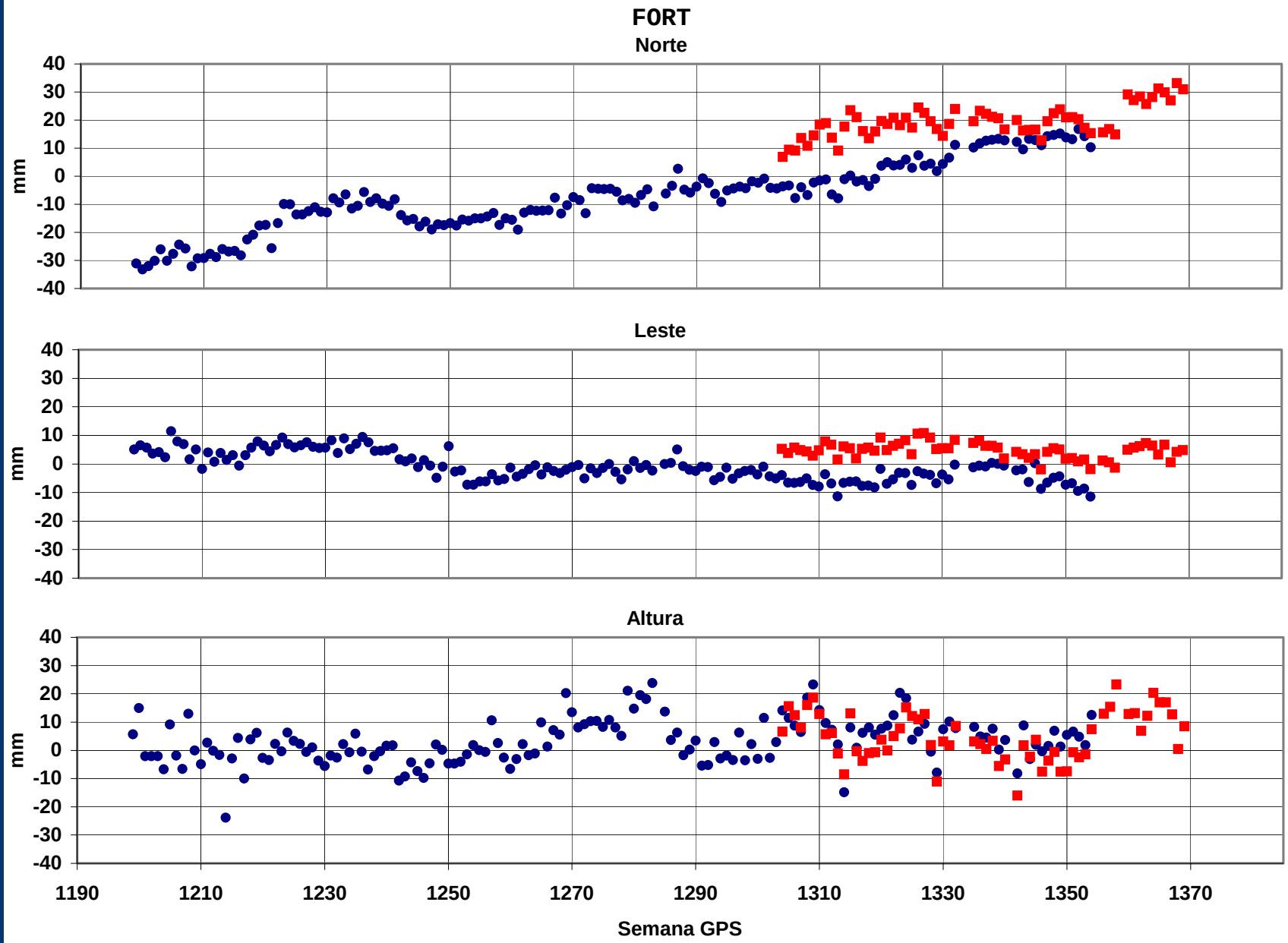
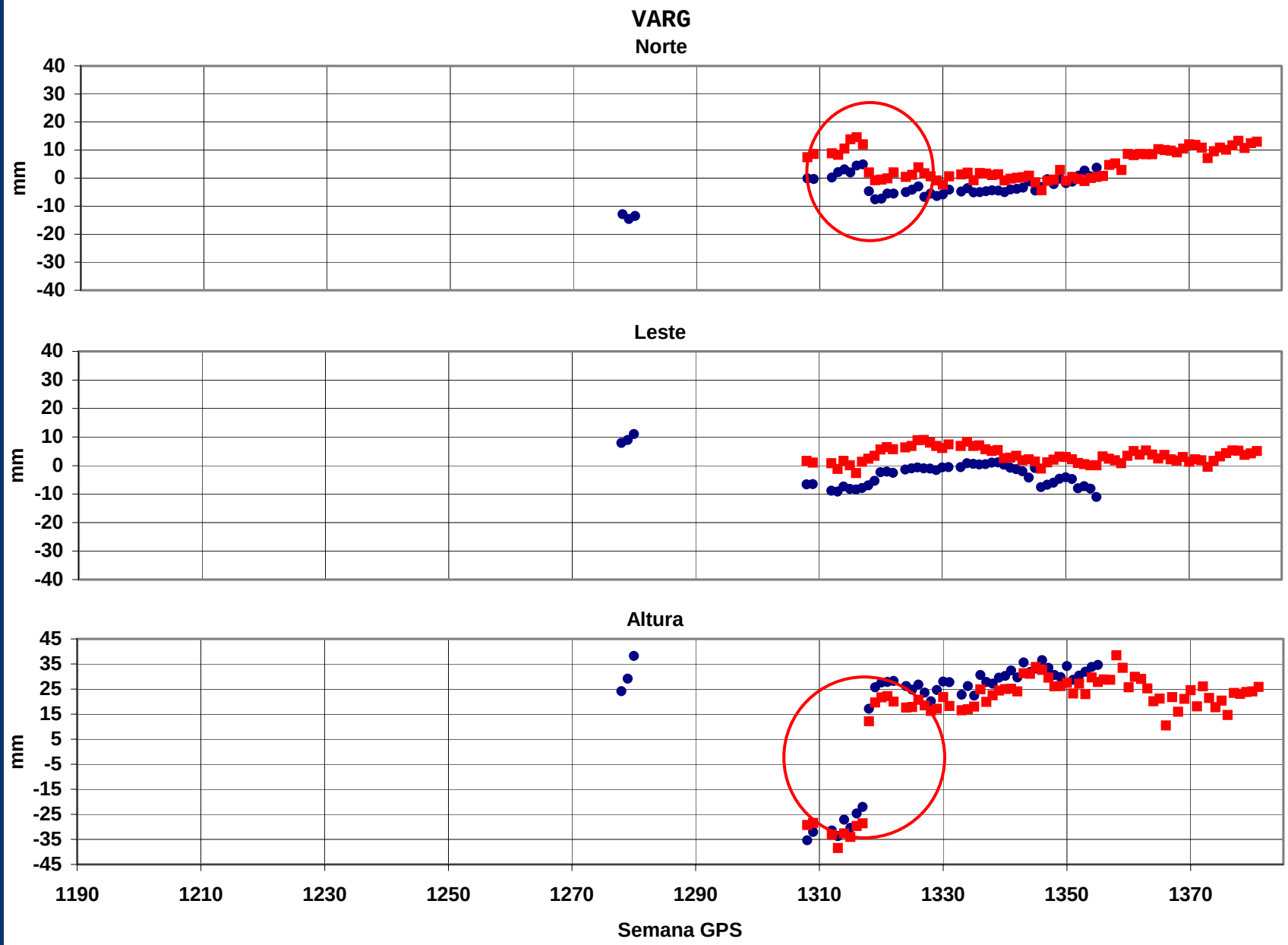


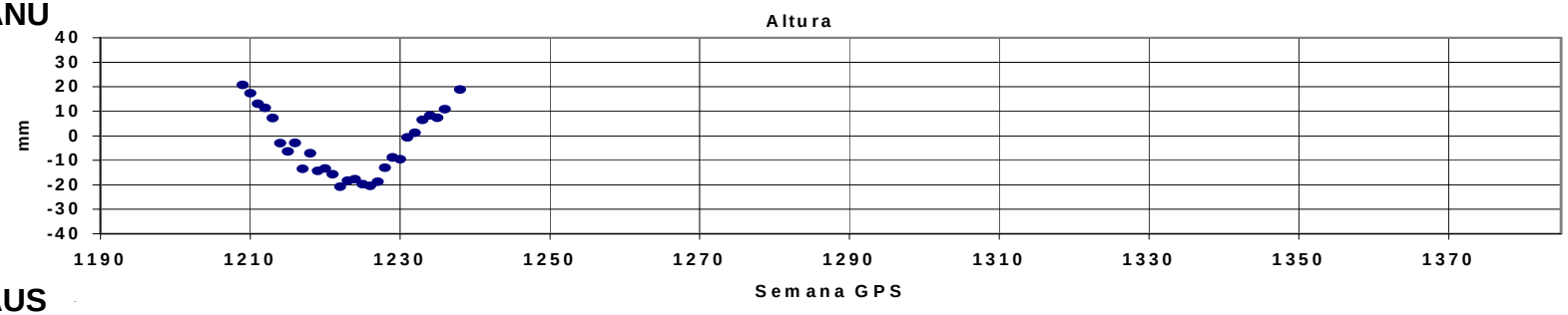
TIME SERIES - VARG



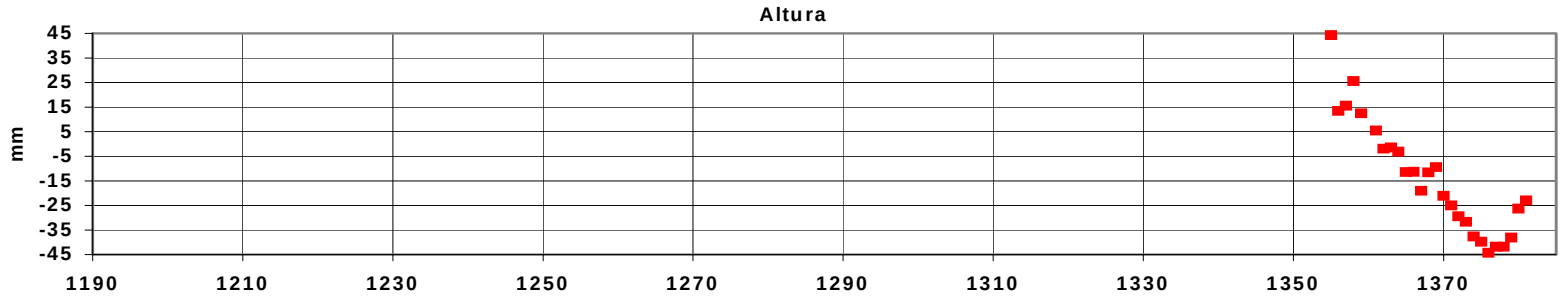
TIME SERIES

IBGE

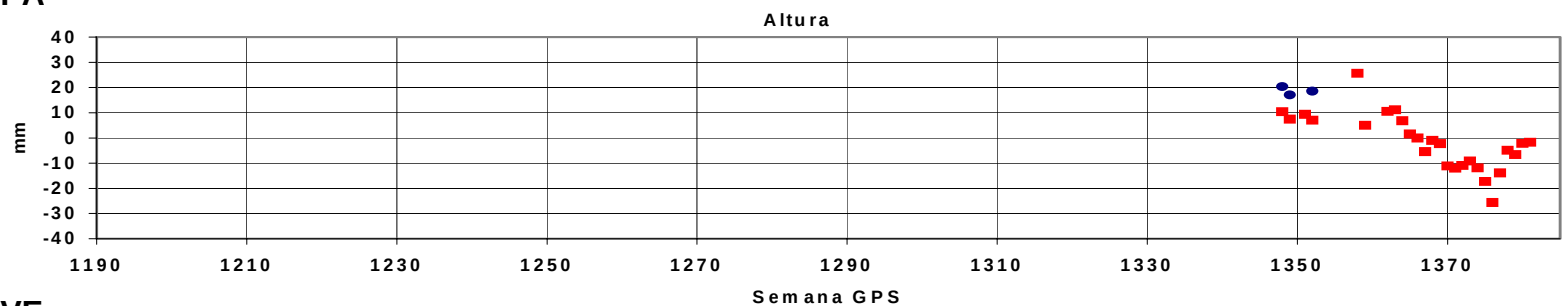
MANU



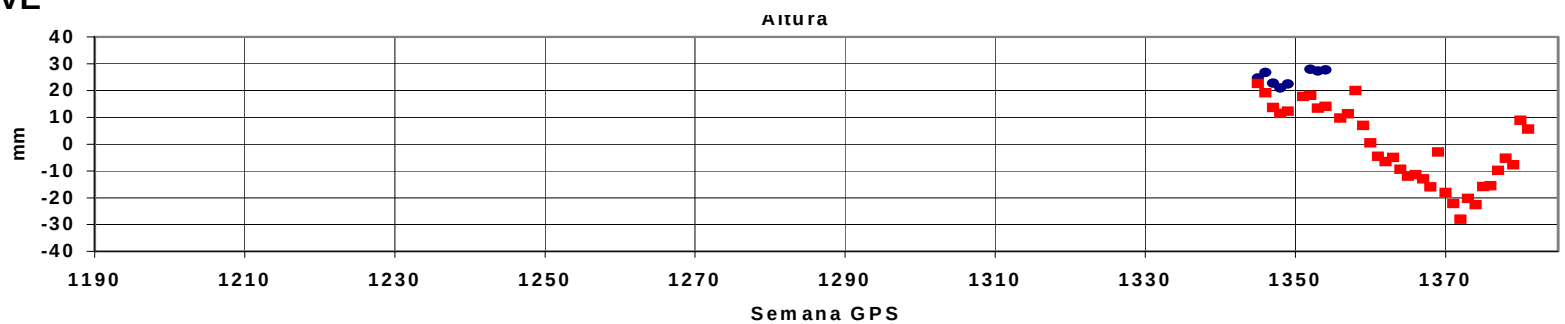
NAUS



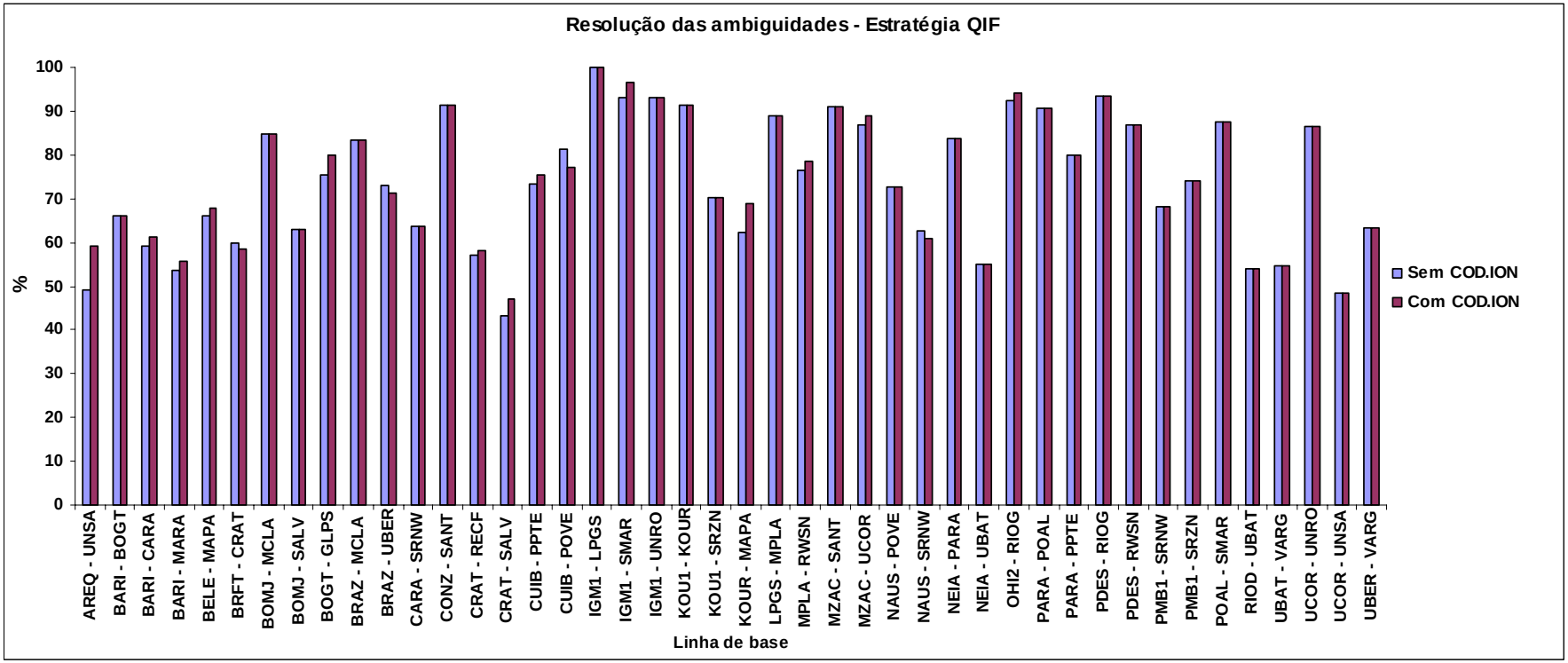
MAPA



POVE



IONOSPHERE



- Não há uma melhora significativa com a utilização dos arquivos de ionosfera global (CODE) para as estações da região sul americana;
- Necessidade de utilizar arquivos de ionosfera regional;
- Determinar modelos de ionosfera global através do software BERNESE.