

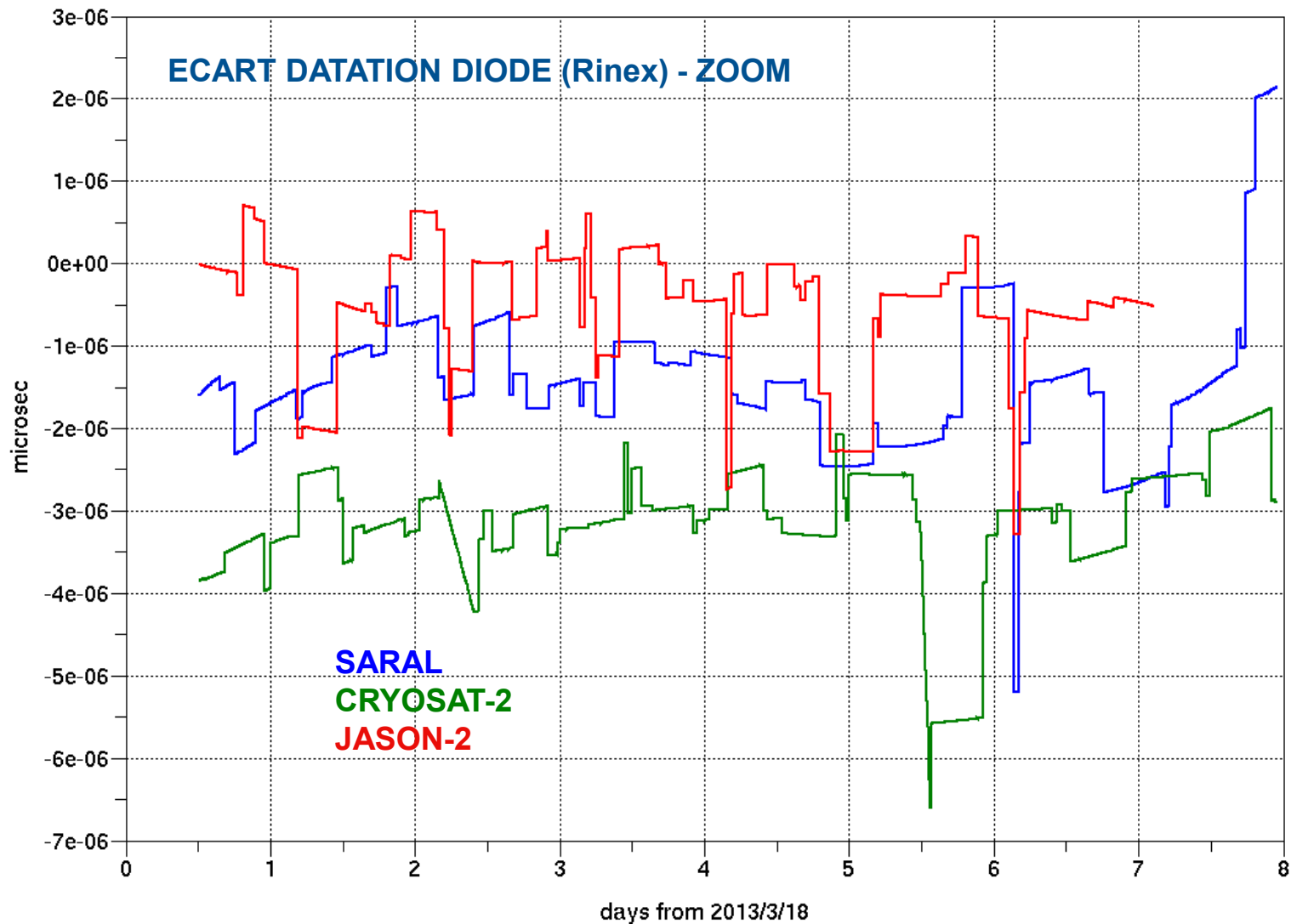
Preliminary Analysis of SARAL POD Solutions

L. Cerri, A. Couhert, S. Houry, F. Mercier
CNES POD Team, Toulouse, France

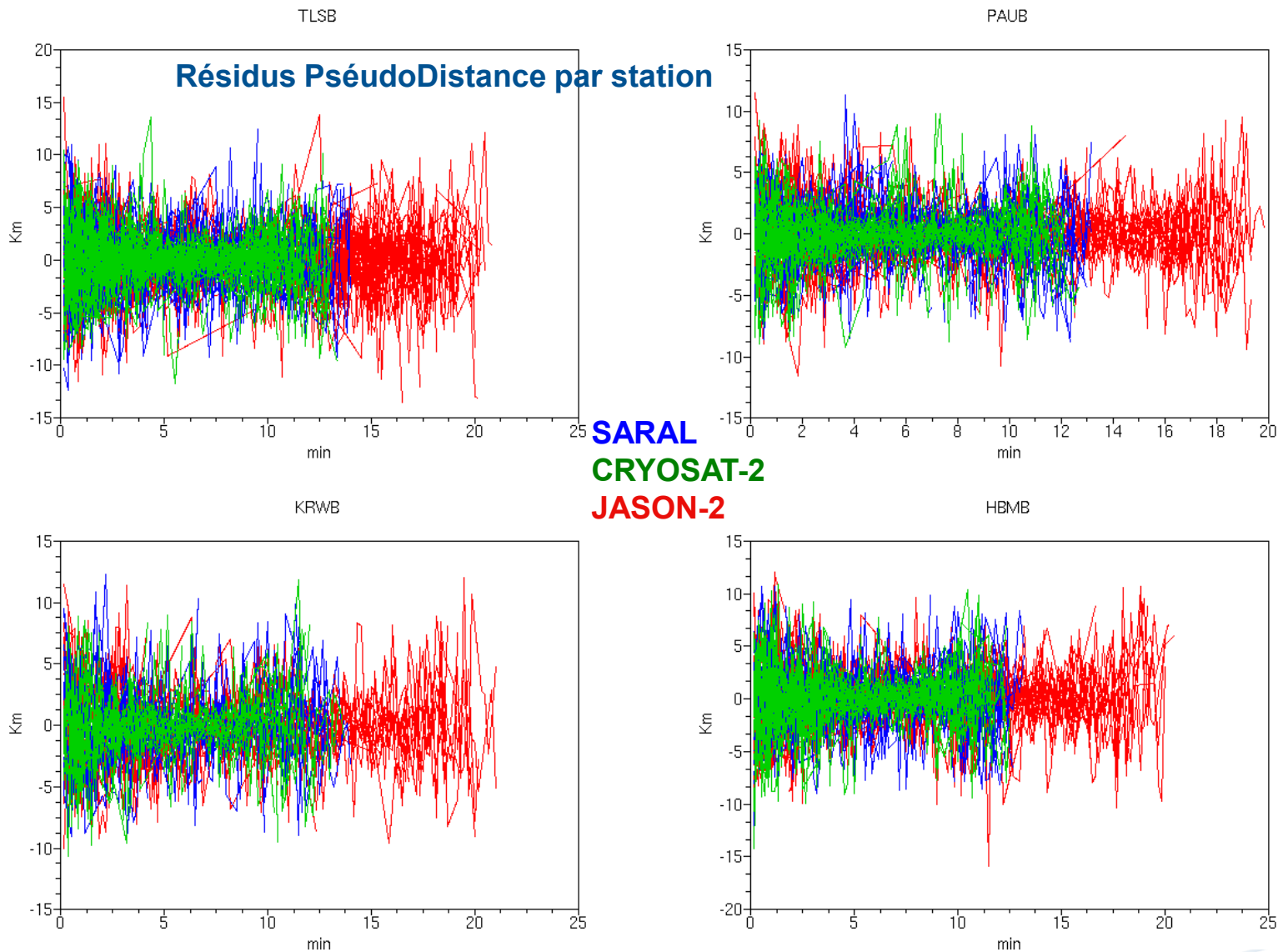
April 04-05, 2013

CNES, Toulouse

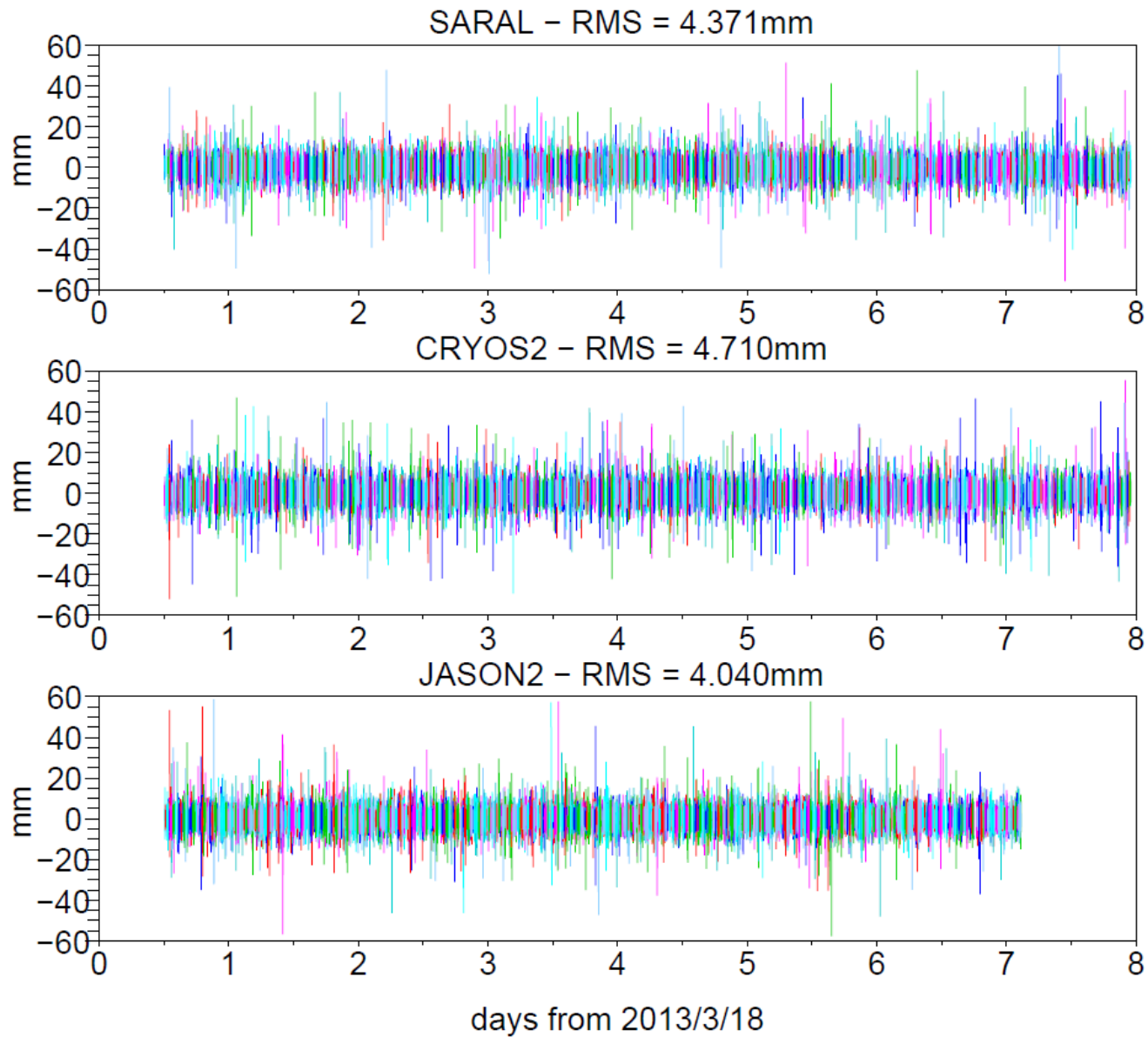
Doris time tagging : nominal



Pseudo range residuals : nominal

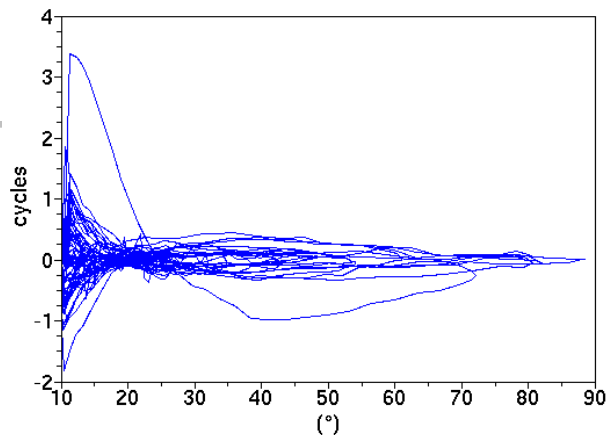


Doppler residuals : nominal

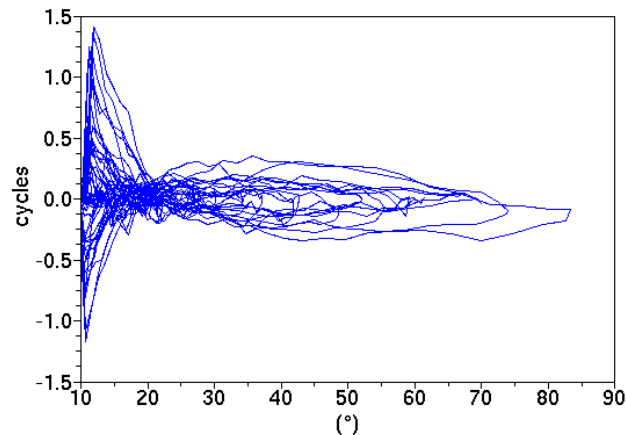


Doppler residuals : nominal

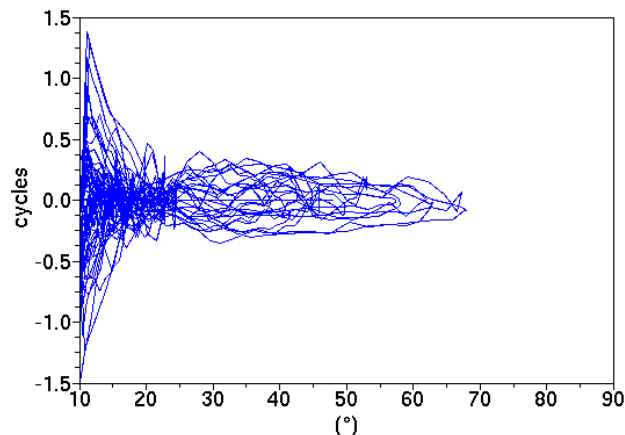
10-sec increments on 2GHz phase residuals - CHAB SARAL



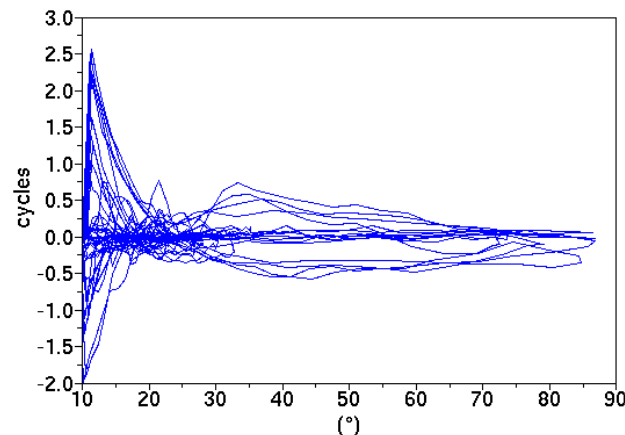
10-sec increments on 2GHz phase residuals - AMVB SARAL



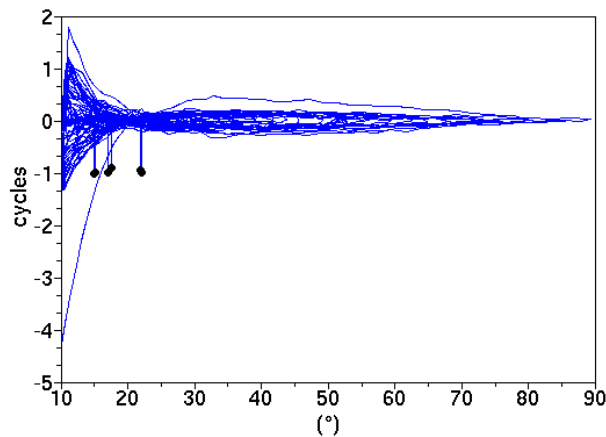
10-sec increments on 2GHz phase residuals - CHAB CRYOSAT-2



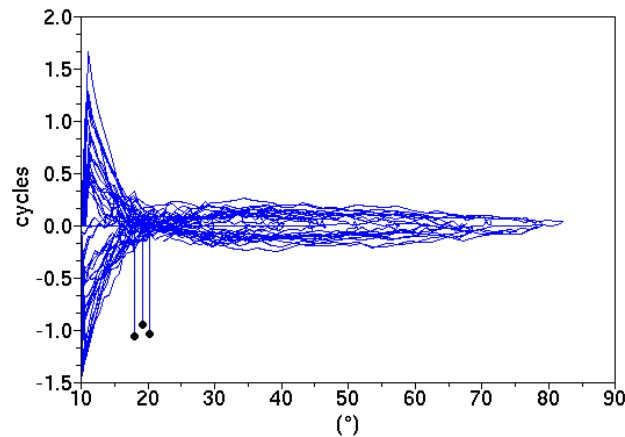
10-sec increments on 2GHz phase residuals - AMVB CRYOSAT-2



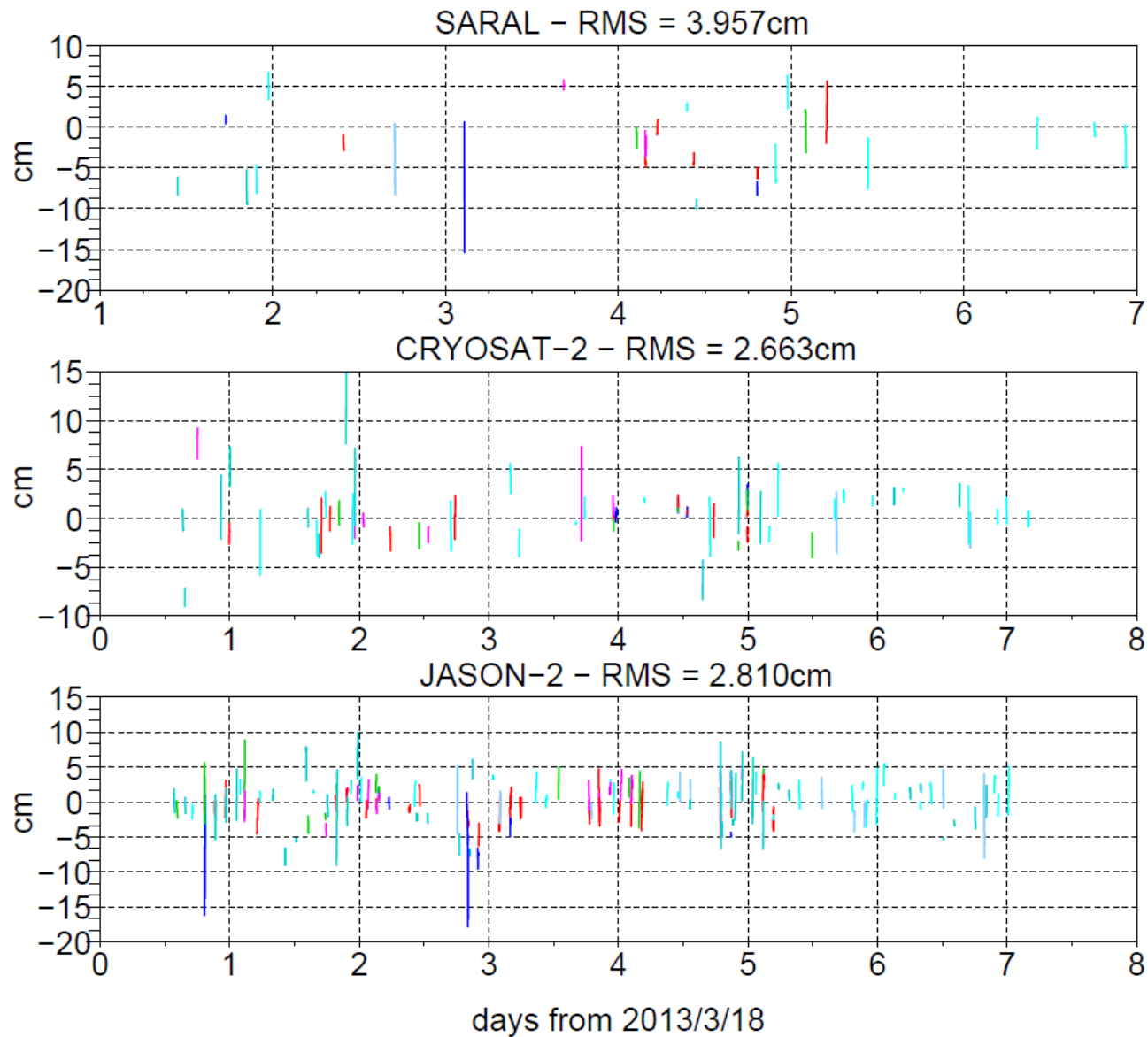
10-sec increments on 2GHz phase residuals - CHAB JASON-2



10-sec increments on 2GHz phase residuals - AMVB JASON-2

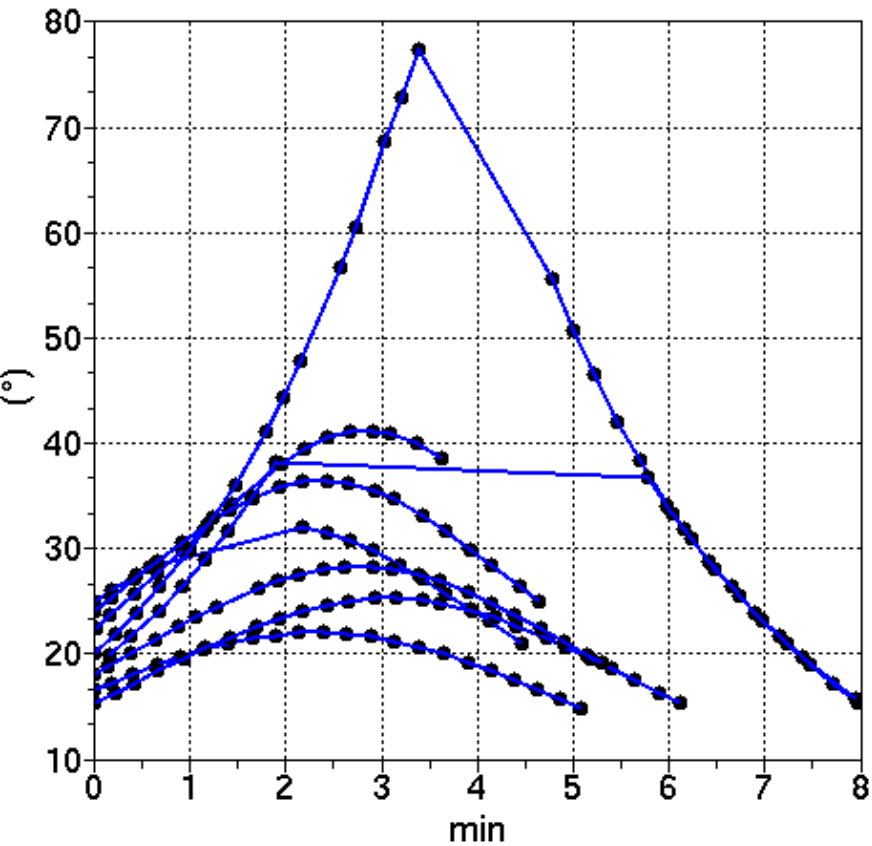


LASER Residuals on DORIS-only orbits

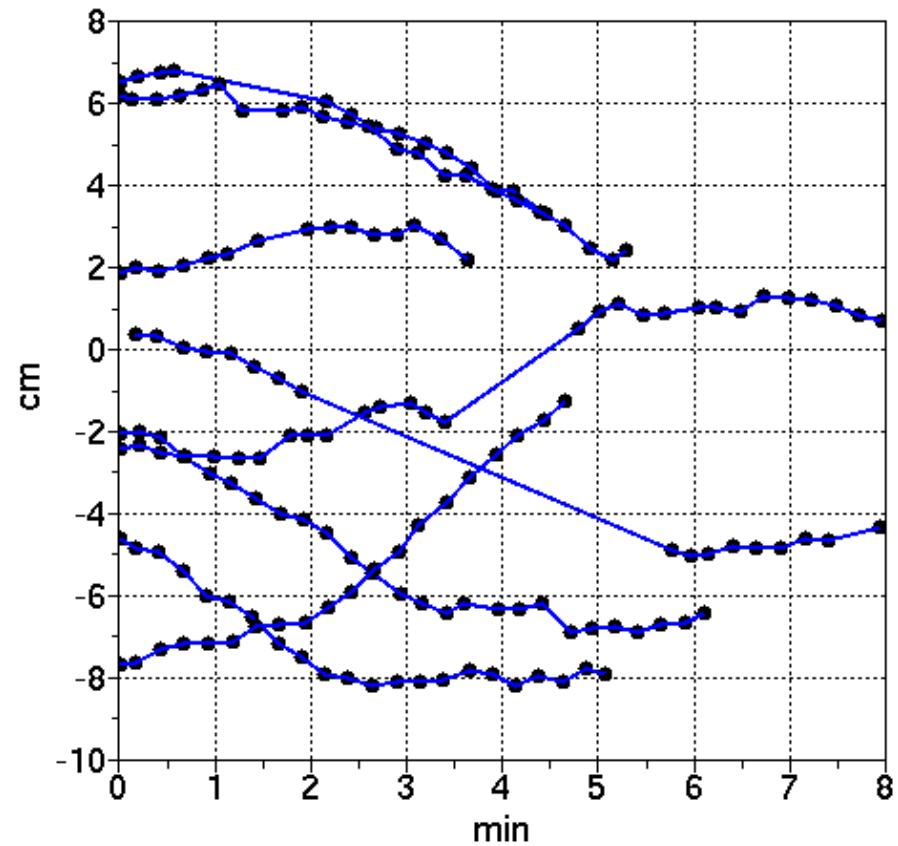


LASER Residuals on DORIS-only orbits

Elevation, SARAL, L7090 (YARRAGADEE)

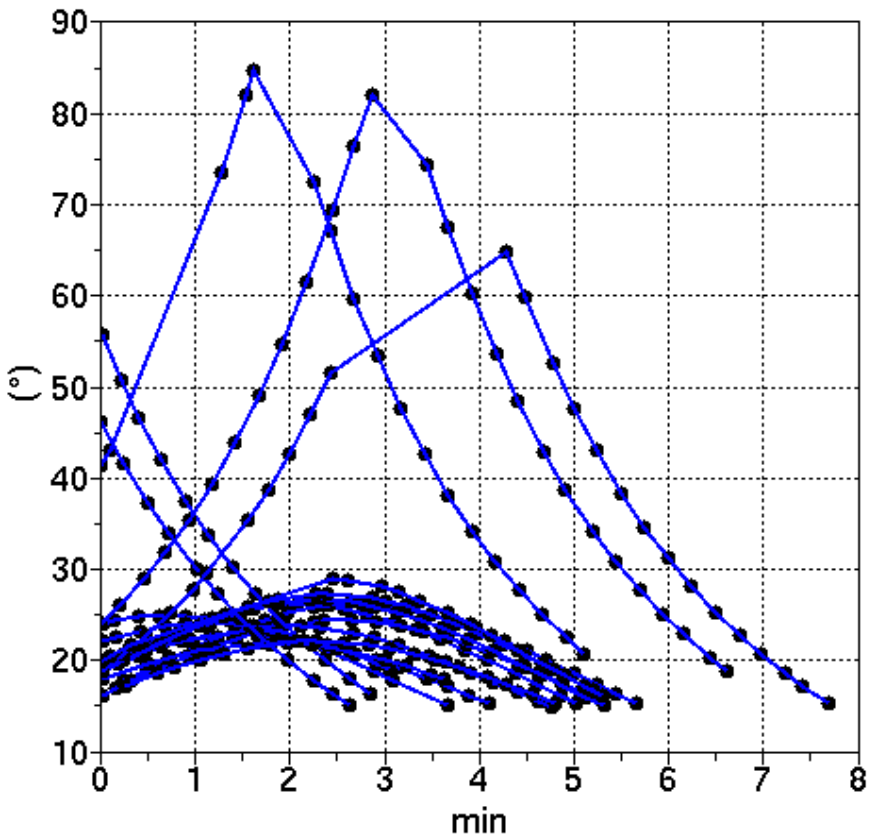


Residuals, SARAL, L7090 (YARRAGADEE)

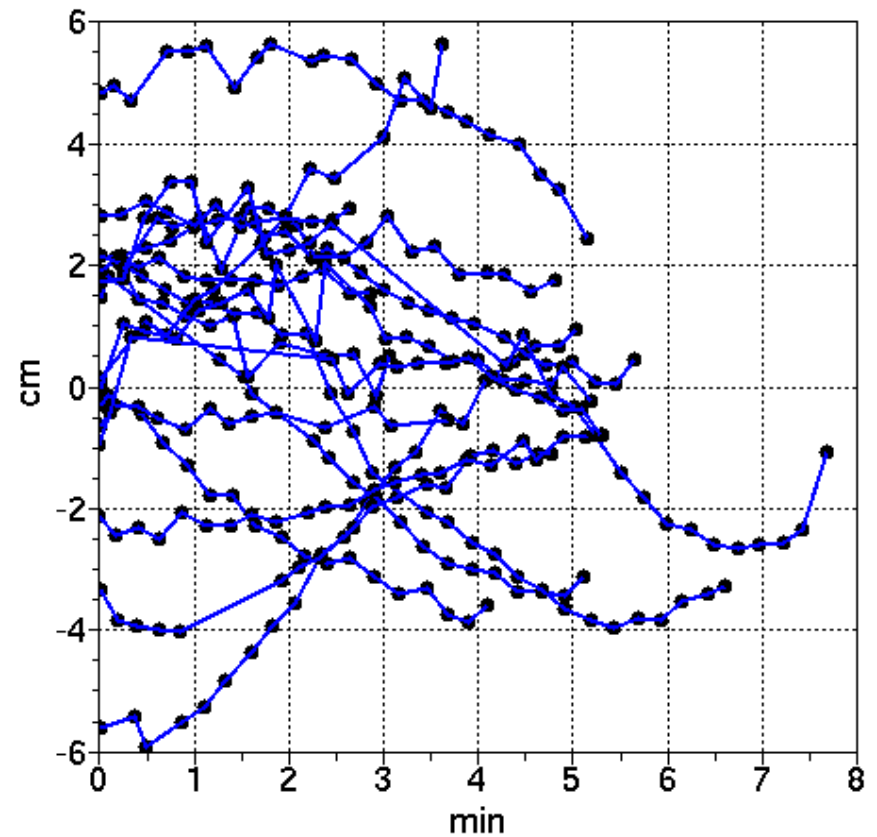


LASER Residuals on DORIS-only orbits

Elevation , CRYOSAT-2 , L7090 (YARRAGADEF)

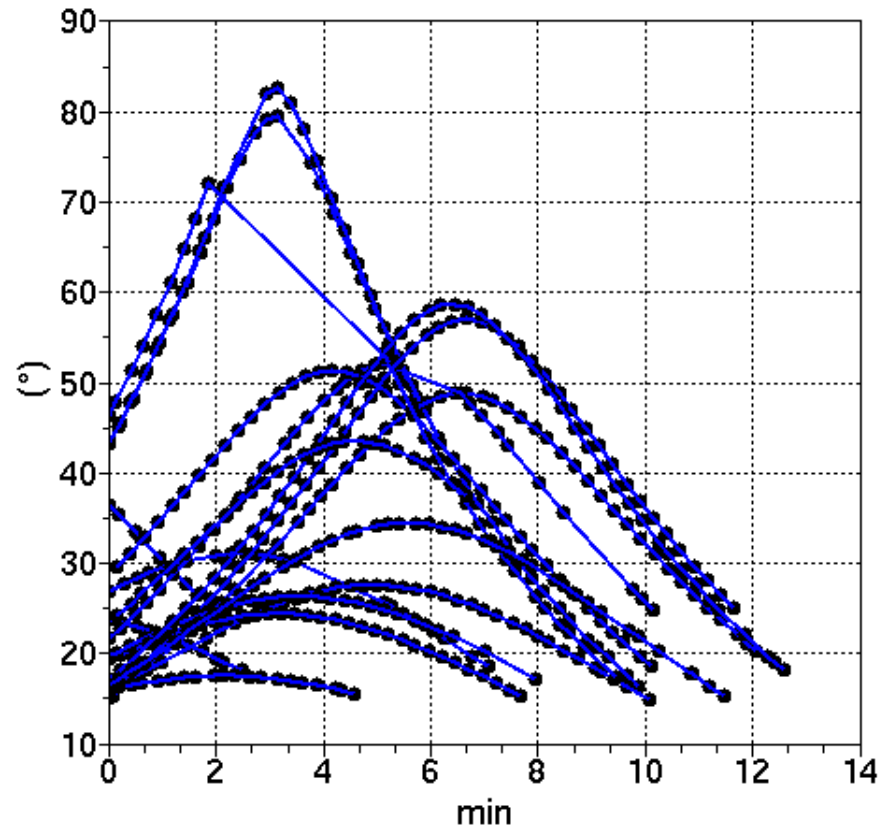


Residuals , CRYOSAT-2 , L7090 (YARRAGADEF)

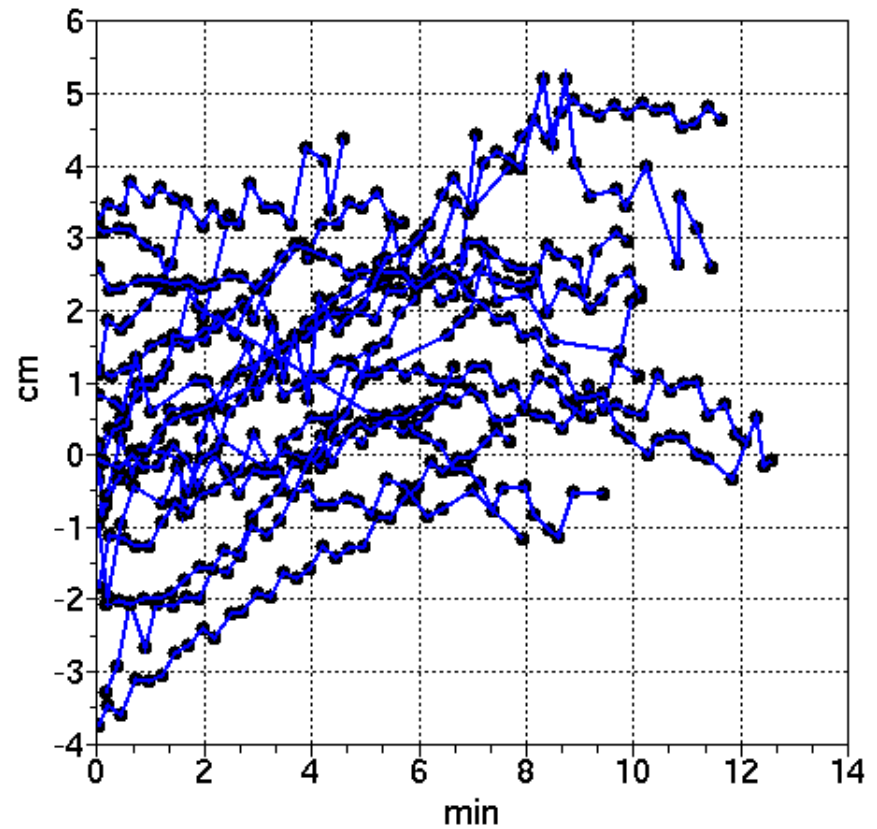


LASER Residuals on DORIS-only orbits

Elevation , JASON-2 , L7090 (YARRAGADEF)

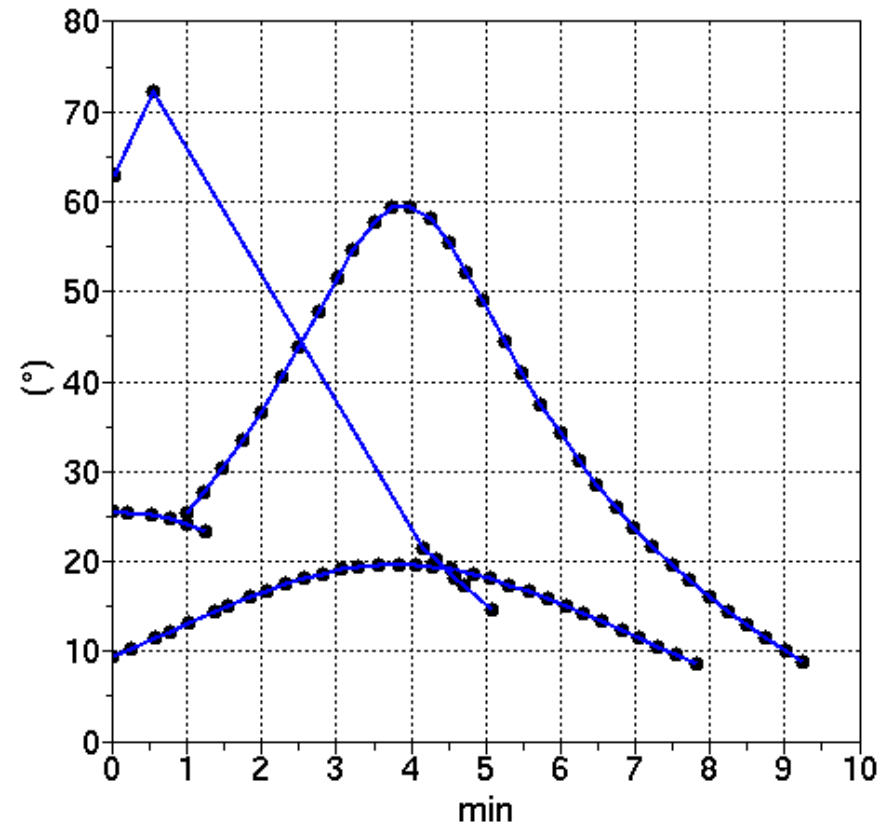


Residuals , JASON-2 , L7090 (YARRAGADEF)

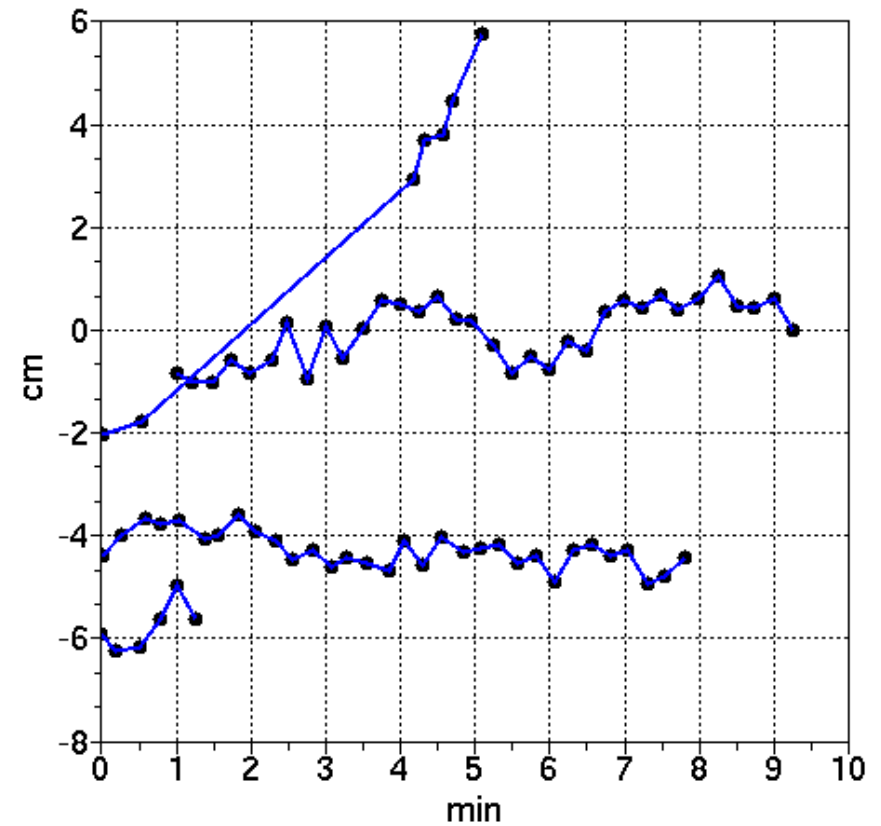


LASER Residuals on DORIS-only orbits

Elevation , SARAL , L7845 (GRASSE)

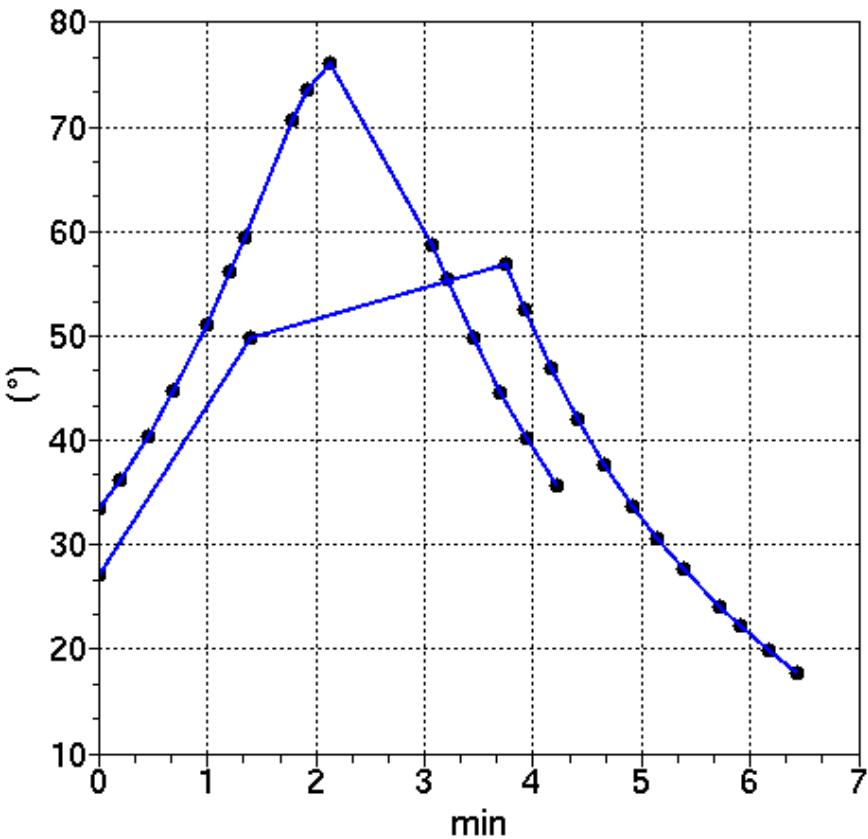


Residuals , SARAL , L7845 (GRASSE)

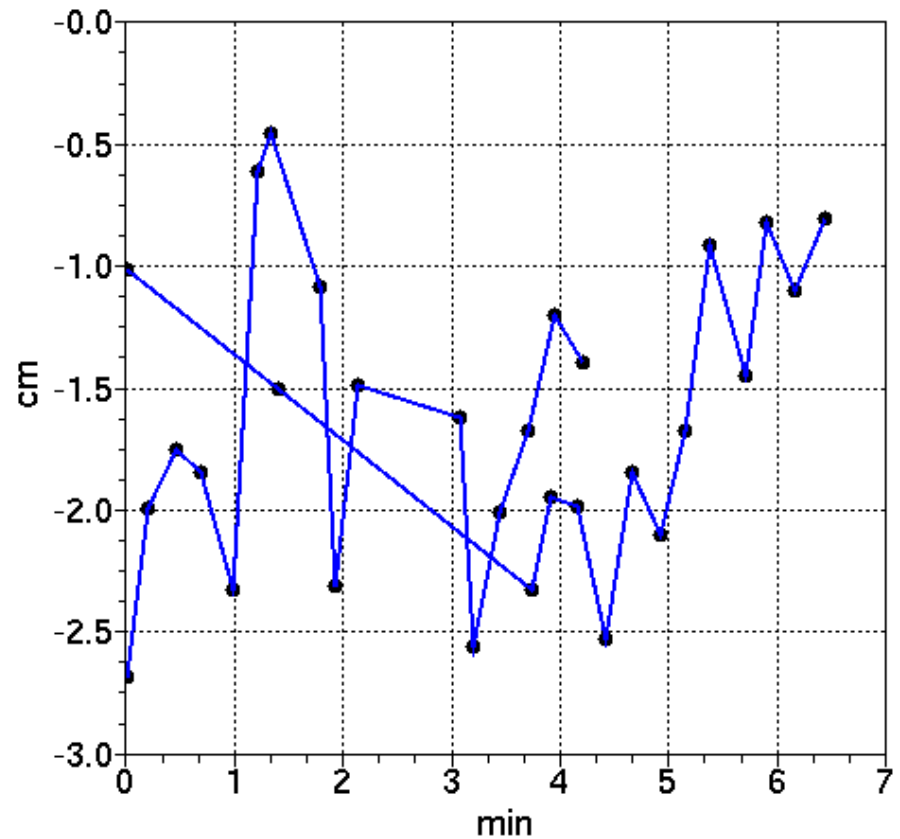


LASER Residuals on DORIS-only orbits

Elevation, CRYOSAT-2, L7845 (GRASSE)

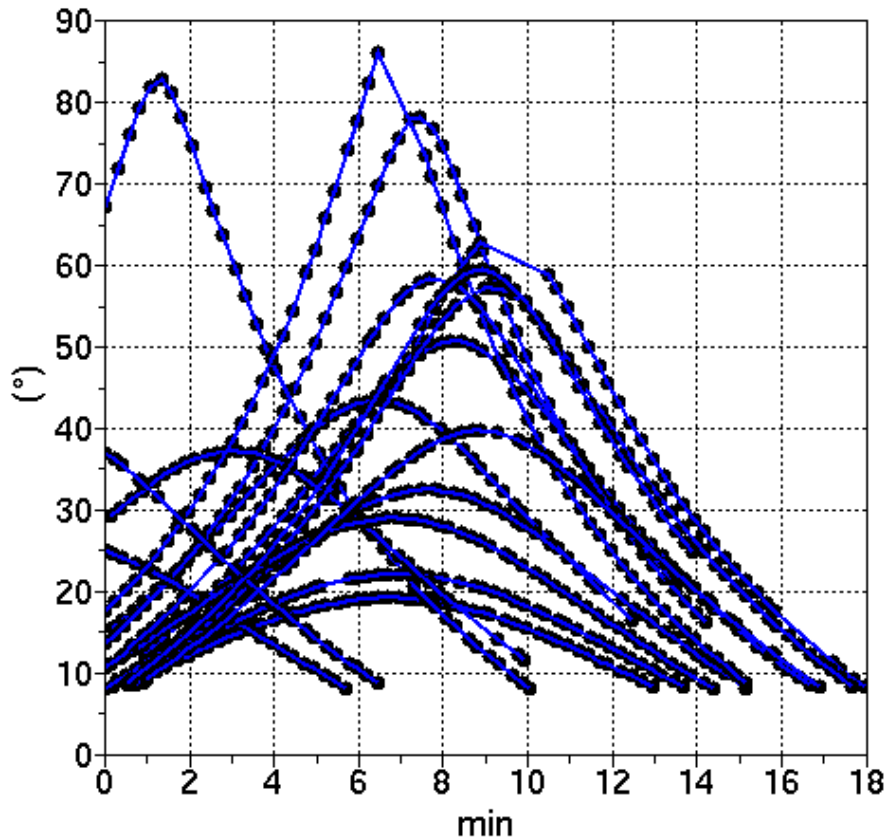


Residuals, CRYOSAT-2, L7845 (GRASSE)

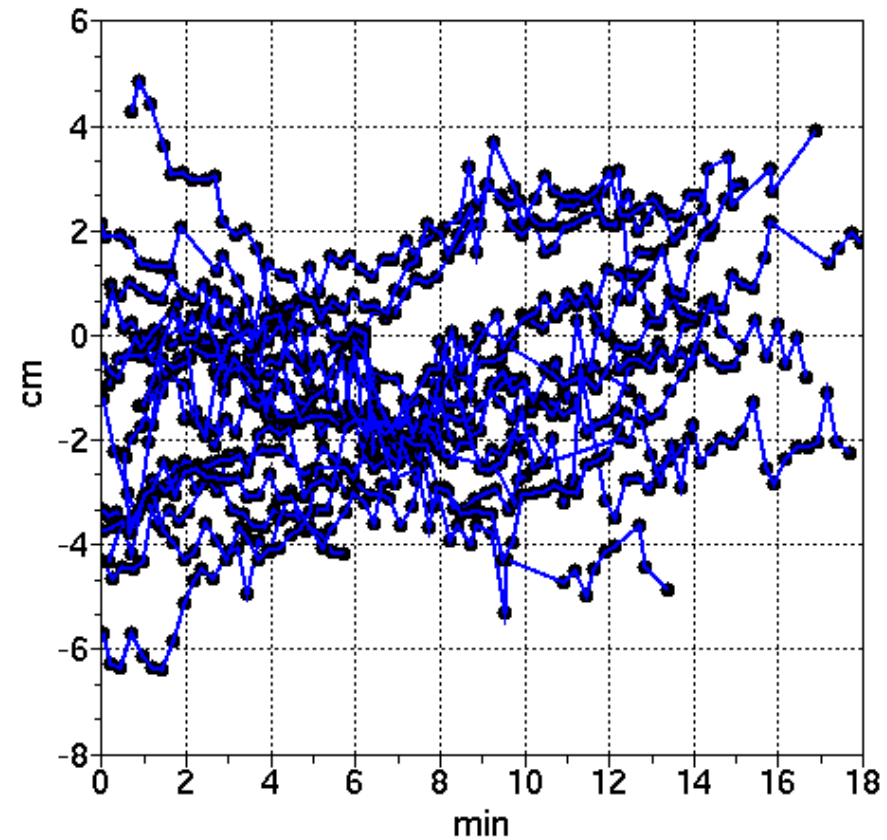


LASER Residuals on DORIS-only orbits

Elevation, JASON-2, L7845 (GRASSE)

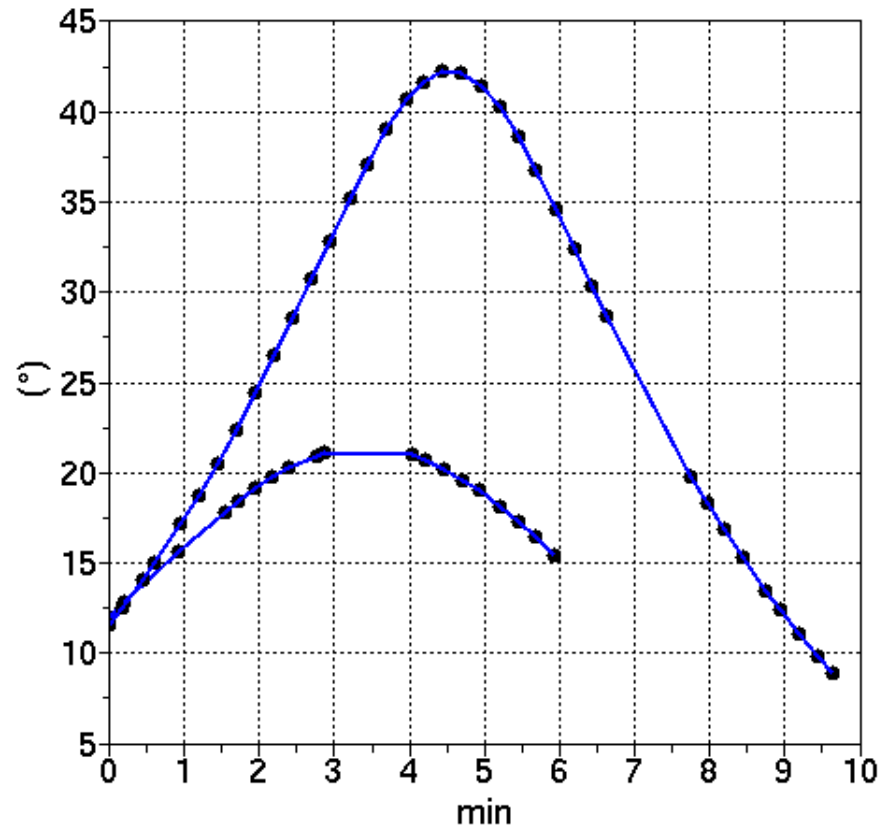


Residuals, JASON-2, L7845 (GRASSE)

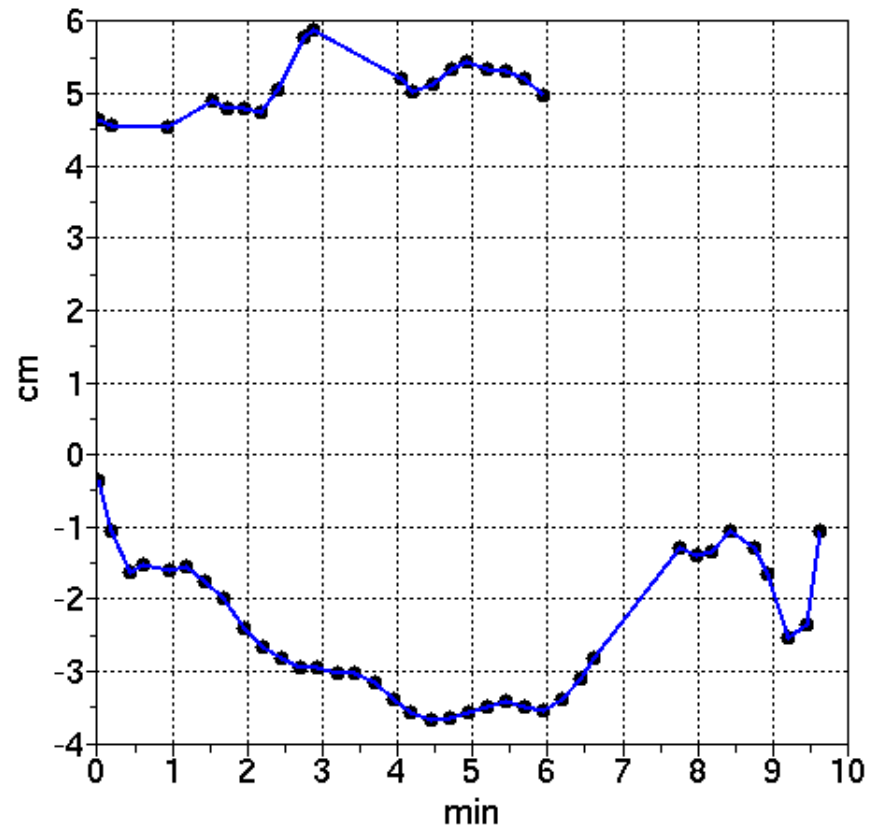


LASER Residuals on DORIS-only orbits

Elevation , SARAL , L7839 (GRAZ)

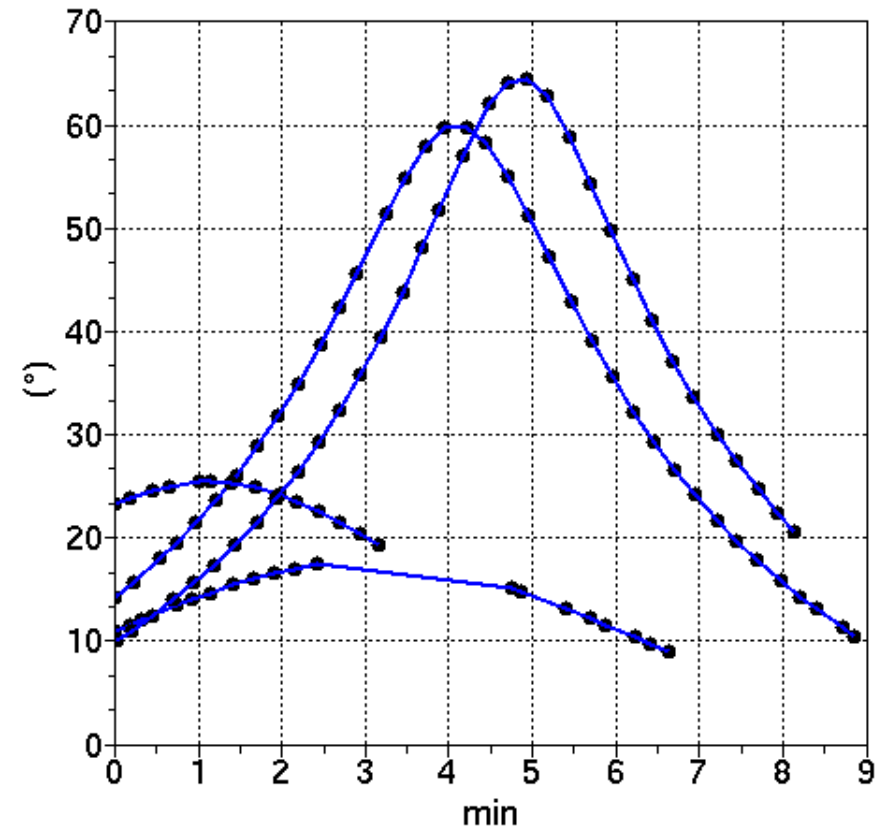


Residuals , SARAL , L7839 (GRAZ)

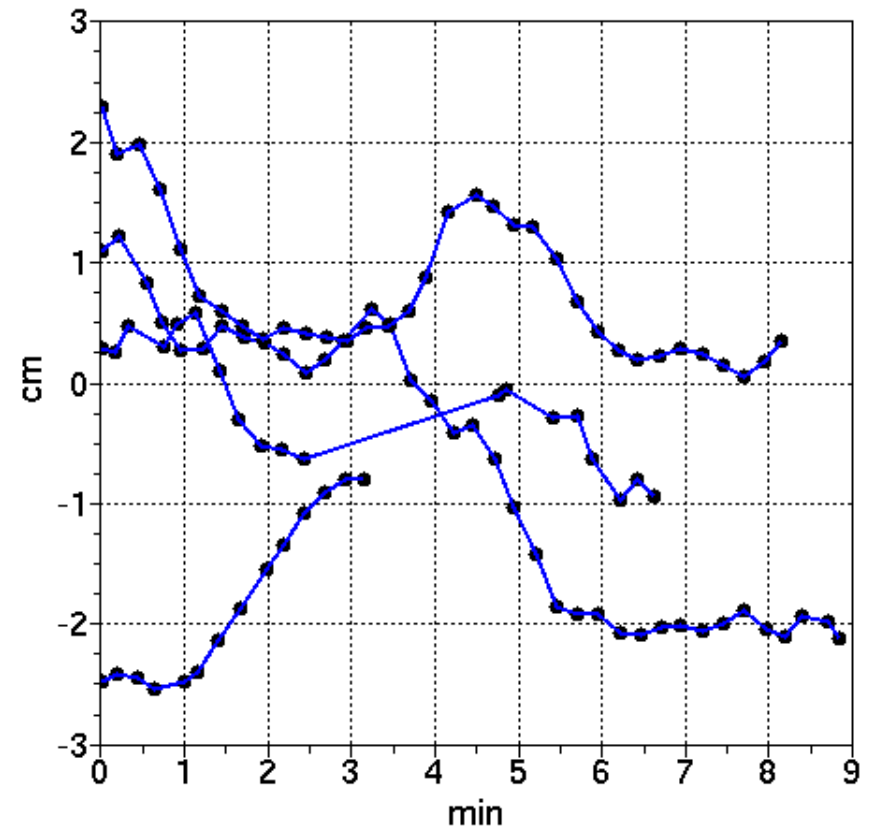


LASER Residuals on DORIS-only orbits

Elevation , CRYOSAT-2 , L7839 (GRAZ)

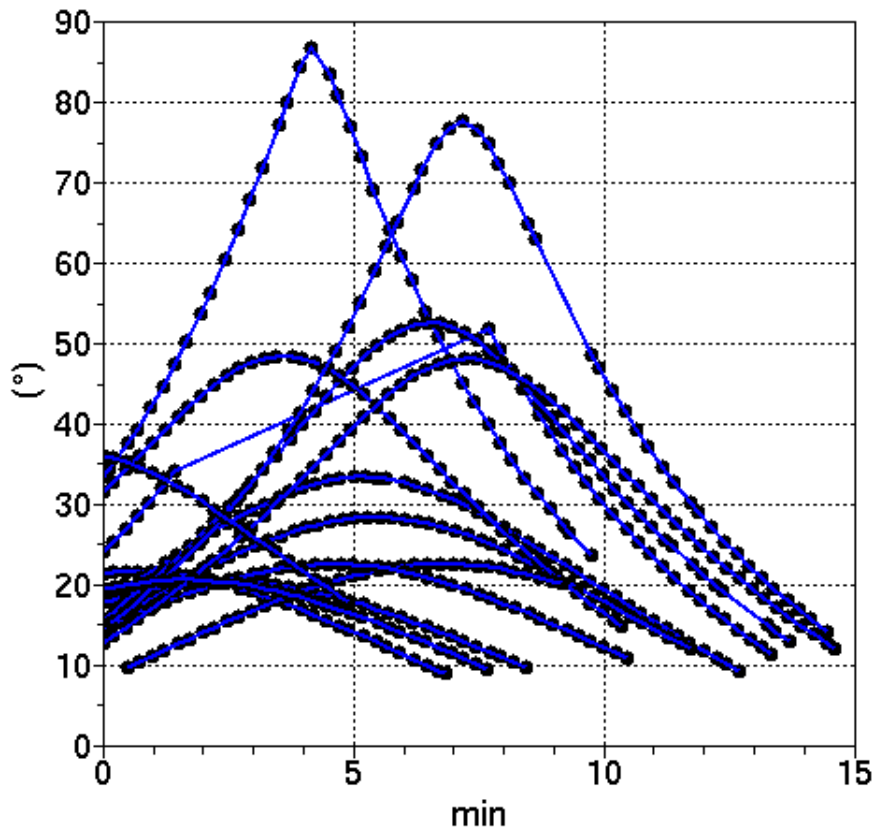


Residuals , CRYOSAT-2 , L7839 (GRAZ)

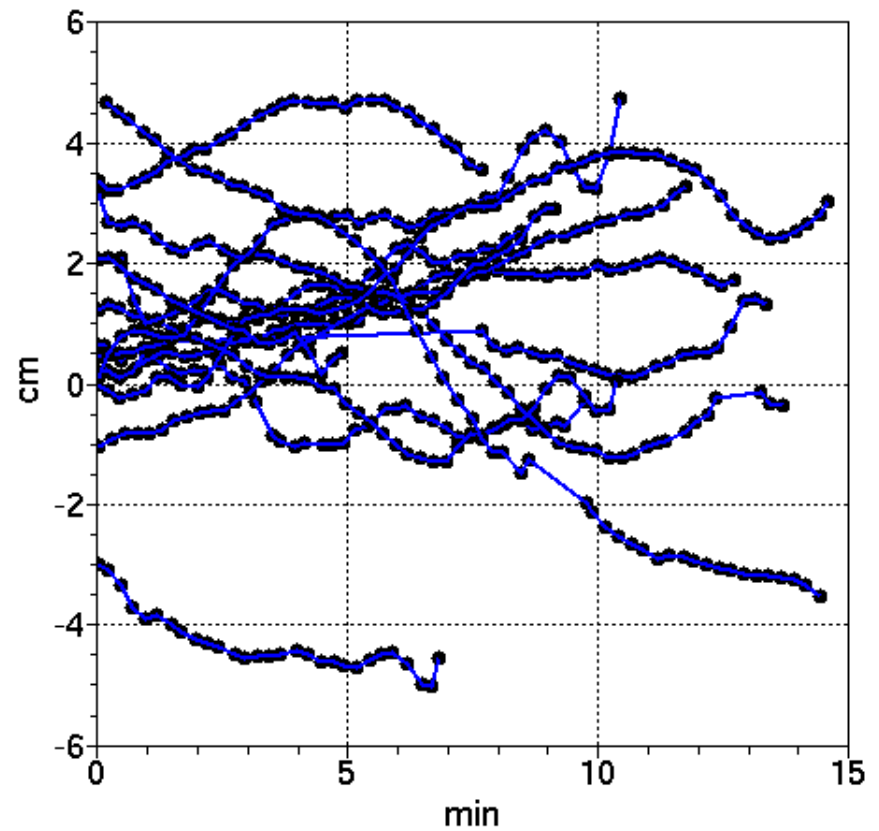


LASER Residuals on DORIS-only orbits

Elevation , JASON-2 , L7839 (GRAZ)

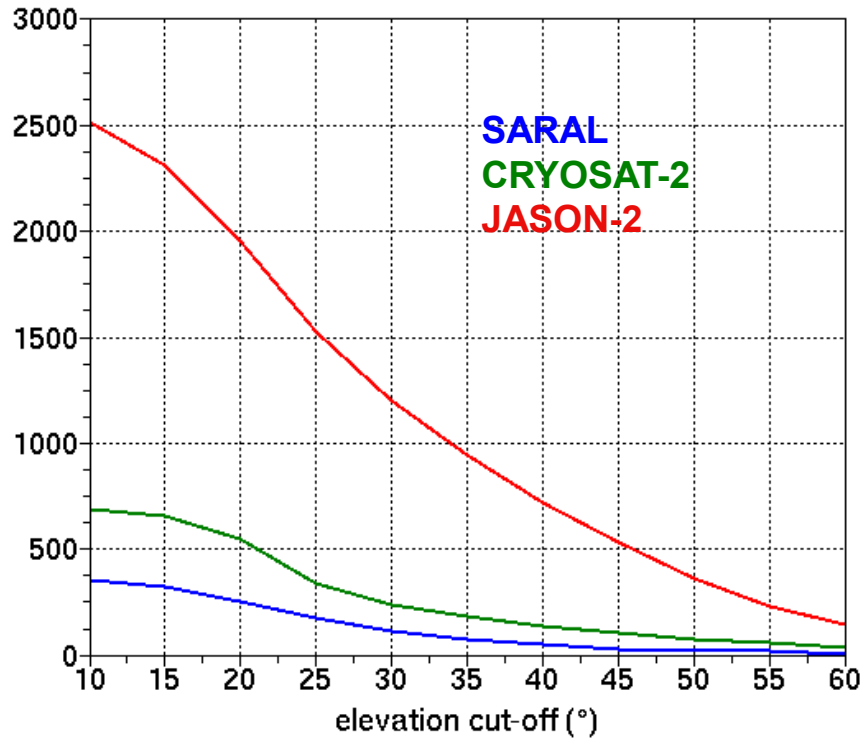


Residuals , JASON-2 , L7839 (GRAZ)

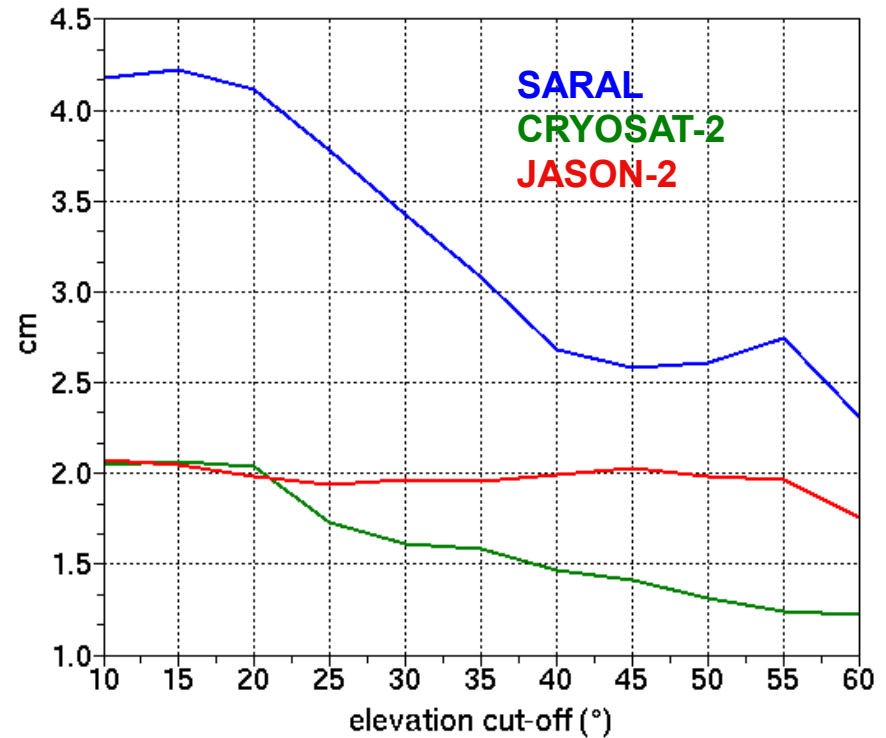


RMS of SLR residuals over this ARC

Number of points

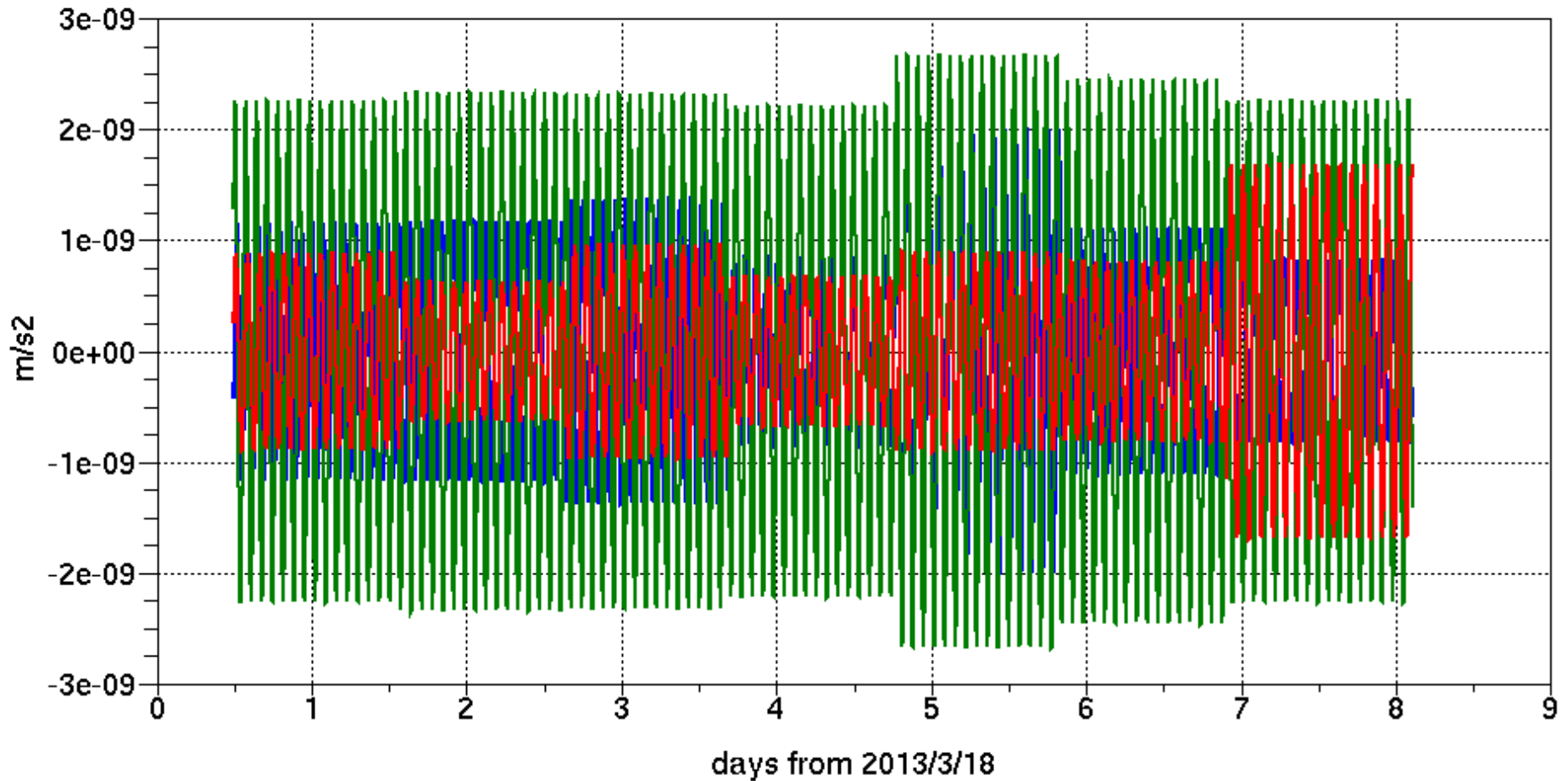


RMS of SLR residuals



L7090 , L7845 , L7839 , L7105 , L7840 , L7810 , L7941

1/rev Along track



Jason-2 Beta' ~ 60° over this arc, peu d'effet
along track de la prsd, comparable à saral

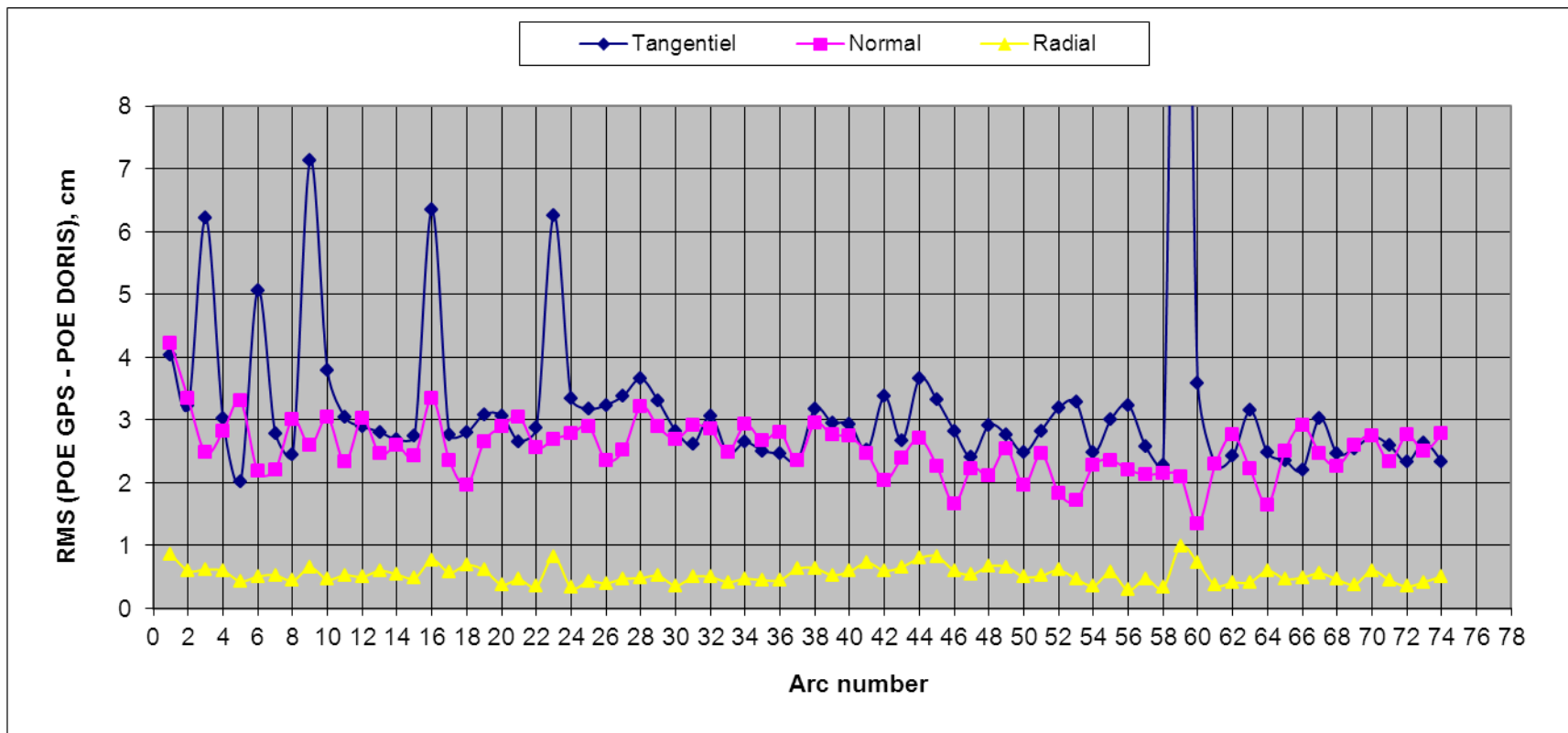
SARAL
CRYOSAT-2
JASON-2

Conclusions

- ❑ Mesures DORIS : résidus nominaux
- ❑ Mesures LASER :
 - peu de mesures pour l'instant
 - les résidus des mesures disponibles sont compatibles avec une perfo radial de l'orbite dynamique DORIS ~ 2 cm RMS
 - Une période plus longue est nécessaire pour une évaluation plus précise (biais, signatures du réflecteur)
- ❑ Dynamique
 - Signatures normales des forces empirique (1/rev, frottement)
 - Une période plus longue est nécessaire pour une évaluation plus précise des erreurs du macromodèle
 - Nécessité d'évaluer l'impact du potentiel variable (impact attendu est similaire à celui observé sur Envisat)
 - Manœuvre de maintien à poste du 23/03 : ajustement nominal

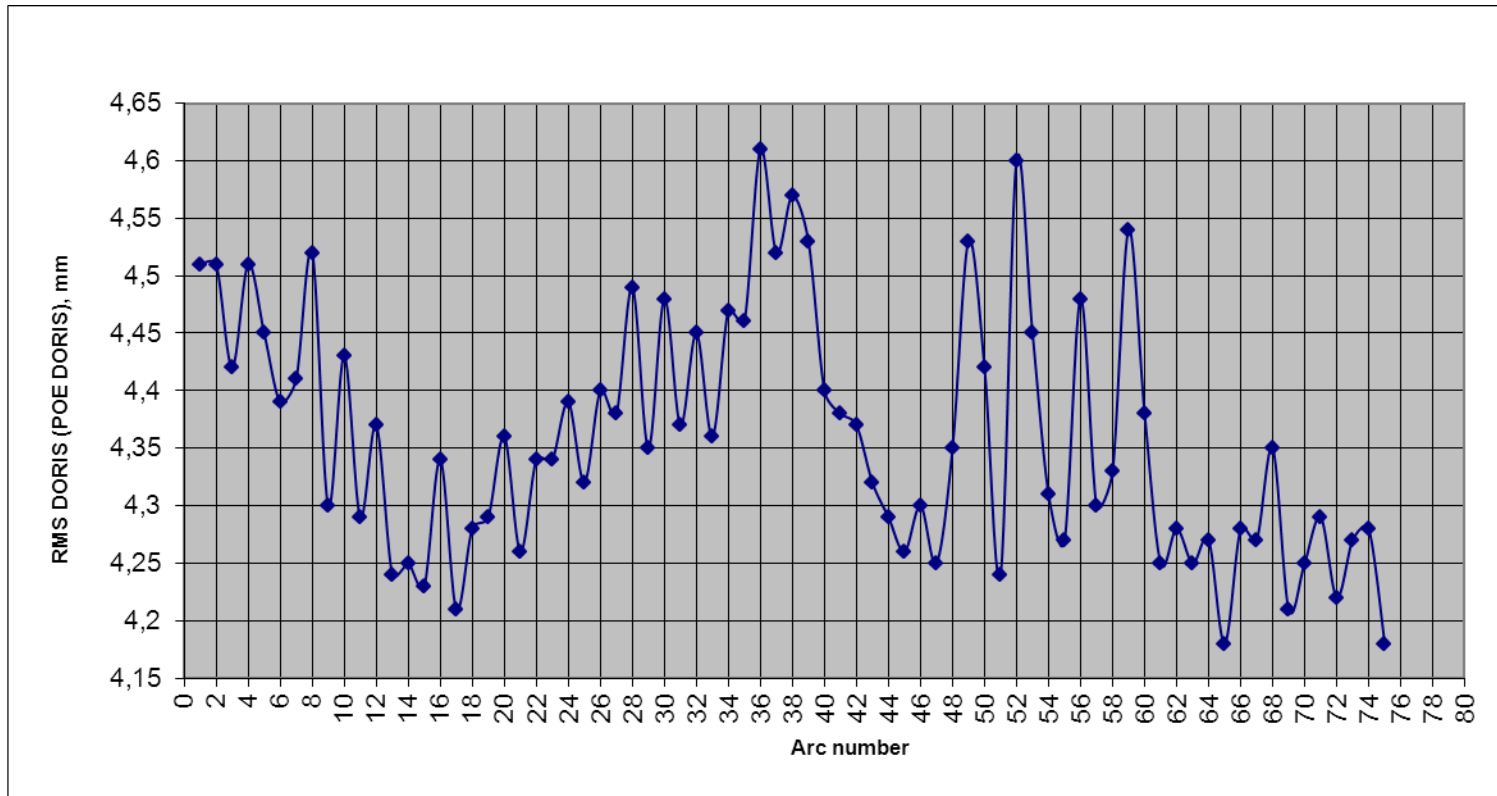
HY2A Status

□ Stable orbit accuracy : DORIS vs GPS dynamic orbit comparison



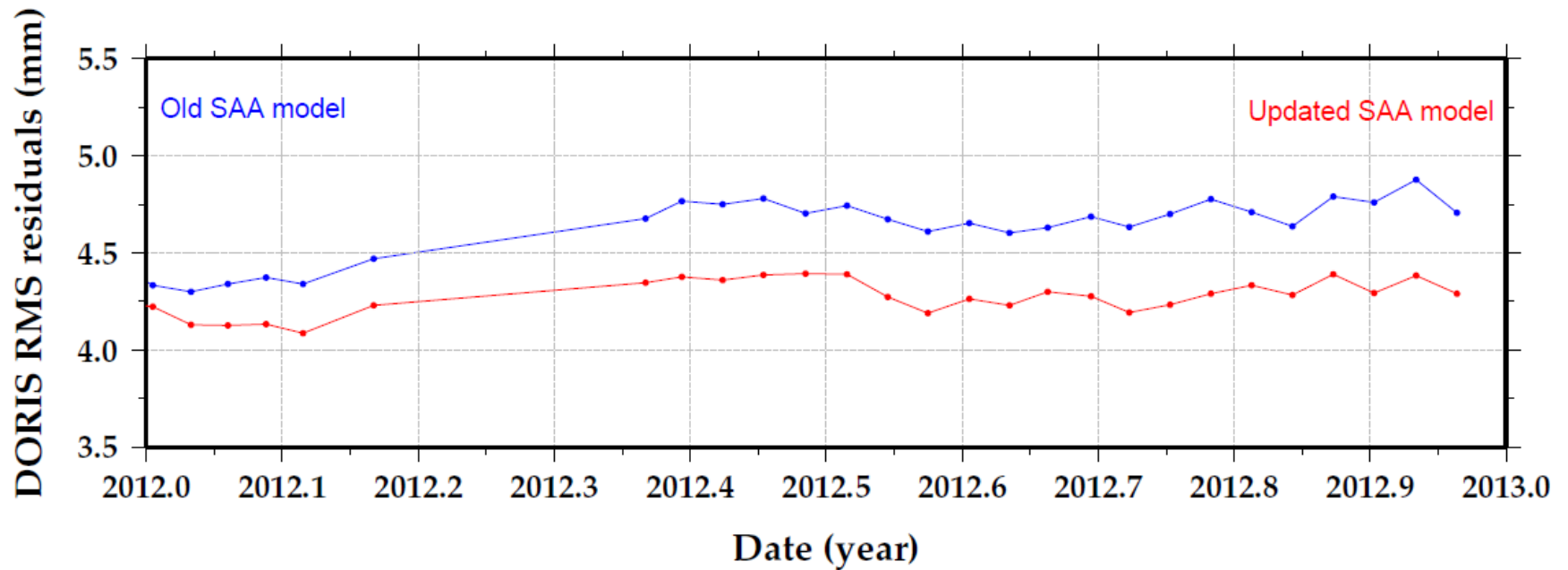
HY2A Status

□ DORIS RMS



JASON-1 Status

Update of SAA model



JASON-1 Status

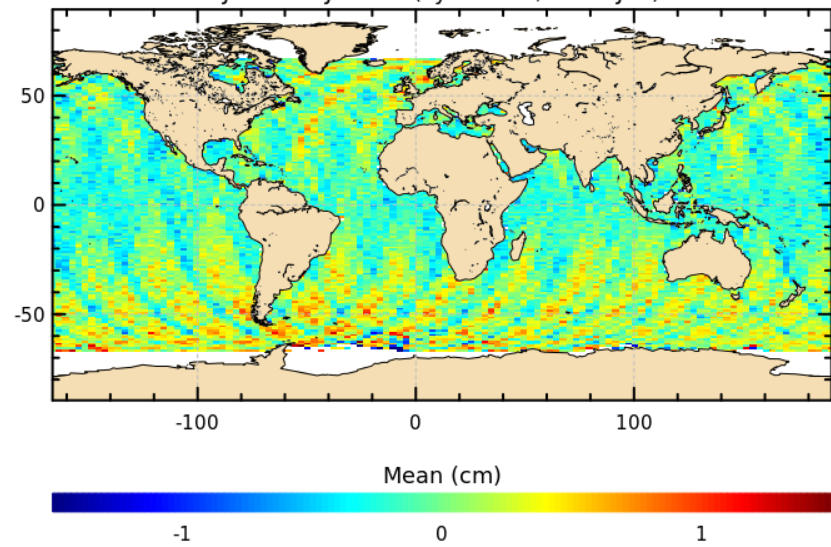
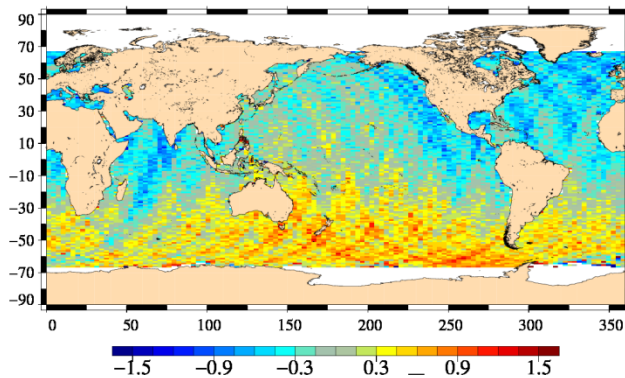
- SAA stations downweighting on Jason-1 :
 - N/S effect causing inconsistency with Jason-2 (using the same weights corrects)
 - But RMS of Xover differences is slightly improved SAA stations are downweighted

J1-J2 SSH differences , DORIS-only, same Station weight, GDR-D

Differences of uncorrected SLA (Orbit - Ku - bandrange - MS

Jason-1 - Jason-2 (cycle1-20 / PONDJA2)

J1-J2 SSH differences GDR-D



Nbr :	12024	Std Dev :	0.35446891	Min :	-6.0651139
Mean :	-2.734613e-14	Median :	-0.022393895	Max :	6.3218861