IERS COL – INPUT DGFI

03. May 2010, Vienna

Input data from DGFI

- 15 VLBI Sessions

parameters	resolution	parametrization
Coordinates	daily	
Pole UT1-UTC Nutation	daily daily daily	O+R O+R O

- 3 weekly SLR solutions (L1,L2,E1,E2) and 1 monthly

parameters	resolution	parametrization
Coordinates	weekly	weekly
Pole LOD	daily daily	offset

IERS COL - COMPARISONS

03. May 2010, Vienna

Input data (21. April 2010)

technique	Inst.	Resolution	Remarks
DORIS	GRGS	W	/
GPS	AIUB	D	/
	GRGS	W	strong constraint for nutation needed
SLR	AIUB	W	/
	ESOC	W	ITPI not correct
	DGFI	W	not completely constraint free (orientation)
VLBI	DGFI	D	/
	GRGS	D	ZD: station names missed
SLR+DORIS	ESOC	W	rotation fixed to 10-20 mm
SLR+GPS	ESOC	W	rotation fixed to 10-20 mm
SLR+GPS	GFZ	D	negative diagonal elements

Input data (21. April 2010)

technique		Coord	Pole	UT1-UTC	Nutat.	Troposph. ZD	Biases	Satell. Ant. Off.
DORIS	GRGS	w	pwl 6h	pwl 6h	O 12h	pro station and pass		
GPS	AIUB	d	Pwl 2	Pwl 2	Pwl 2	ZD 2h, G d		
	GRGS	w	O+R	O+R	O			
SLR	AIUB	w	O+R	O+R			d	
	ESOC	w	O+R	O+R			w	
	DGFI	w	O	O			w	
	GRGS	w	O noon	O noon				
VLBI	DGFI	d	O+R	O+R	O			
	GRGS	w	O noon	O noon	O noon	ZD 1h		
SLR+ DORIS	ESOC	w	O+R	R				
SLR+ GPS	ESOC	w	O+R	R			w	w
SLR+ GPS	GFZ	W	O	O				

Input data (21. April 2010)

technique		Coord	Pole	UT1-UTC	Nutat.	Troposph. ZD	Biases	Satell. Ant. Off.
DORIS	GRGS	w	pwl 6h	pwl 6h	O 12h	pro station and pass		
GPS	AIUB	d	Pwl 2	Pwl 2	Pwl 2	ZD 2h, G d		
	GRGS	w	O+R	O+R	O			
SLR	AIUB	w	O+R	O+R			d	
	ESOC	w	O+R	O+R			w	
	DGFI	w	O	O			w	
	GRGS	w	O noon	O noon				
VLBI	DGFI	d	O+R	O+R	O			
	GRGS	w	O noon	O noon	O noon	ZD 1h		
SLR+ DORIS	ESOC	w	O+R	R				
SLR+ GPS	ESOC	w	O+R	R			w	w
SLR+ GPS	GFZ	w	O	O				

Comparisons per technique

GPS solutions	coordinates		EOP
	Datum	Residuals	
GRGS - AIUB	1 mm	4 -6 mm (all stations)	0.02 – 0.2 mas
GRGS / AIUB – ESOC(P+L)	T/R 20-60mm	130-150 mm for Australian stations	as orientation

DORIS solutions	coordinates		EOP
	Datum	Residuals	
GRGS – ESOC (D+L)	10-20 mm	15 mm (all stations)	0.2 -2.0 mas

Comparisons per technique

SLR solutions	coordinates		EOP
	Datum	Residuals	
AIUB - DGFI	10 mm	15 mm	as orientation
AIUB - GRGS	5 mm	7 mm	
DGFI - GRGS	15 mm	14 mm	as orientation
AIUB/DGFI/GRGS – ESOC(L+D)	10 -20 mm	30 mm*	as orientation

* some station residuals reach 10 – 30 cm

SLR: - ESOC(P+L) contains only SLR observations to GNSS satellites, thus not comparable to ESOC(D+L)
- new SLR solutions will be provided by DGFI, ESOC and GFZ

VLBI: GRGS will provide new SINEX

Summary

Intra-technique comparisons

- GPS AIUB/GRGS agree very well: residuals 6 mm ⇨ Combination
- SLR
  - AIUB/GRGS agree well: residuals 7 mm ⇨ Combination
  - DGFI: residuals of 15 mm to AIUB/GRGS (diff. Models?)
  - ESOC combined solutions: partly very large residuals
- DORIS GRGS/ESOC(D+L) agree very well:
  residuals (all stations): 15mm ⇨ Combination