

# **SUMMARY**

of DORIS processing at INASAN for 2009

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In 2009 INASAN (ina) Doris Analysis Center installed new version GIPSY-OASIS II software developed by JPL with updated DORIS part of GIPSY developed by IGN/JPL (Linux version 5.0). This software was ported on the new PC computer with the new Linux distributive (Ubuntu 9.04).

# List of INASAN products provided to the IDS (February 2010)

Product	Latest version	Span
Sinex weekly free network	inawd06	1992.8 - 2010.0
Geocenter	Ina05wd01	1992.8 - 2010.0
EOP-series	ina07wd01	1992.8 - 2010.0
STCD-series	ina07wd01	1993.0 - 2007.6

In 2009 INASAN AC fully reprocessed all DORIS data for 1993.0-2010.0  
with the new software and new models

**Old models:**

- 1) elevation cutoff angle = 15 degrees
- 2) the gravity field is GGM01C (120x120)
- 3) solar radiation pressure coefficients were estimated
- 4) Lanyi tropospheric mapping function was used
- 5) atmospheric density model DTM94 as a priori
- 6) estimating atmospheric drag every 6 hrs for SPOT's and every 24 hrs for TOPEX
- 7) polar motion rates were estimated

**New models:**

- 1) elevation cutoff angle = 15 degrees and data downweighting at low elevation were applied
- 2) the gravity field is GGM02C (120x120)
- 3) fixing daily coefficients for solar radiation pressure models
- 4) Niell tropospheric mapping function was used
- 5) atmospheric density model DTM2000 as a priori
- 6) estimating atmospheric drag every 1 hr
- 7) polar motion rates were not estimated

Part of reprocessed results were sent to J.J. Valette for validation.

Results of validation ?

## Comparison INA geocenter times series (old-ina05wd01 and new-ina10wd01) with IGN geocenter times series

AC	Time series	Span	Tx				Ty				Tz			
			Annual		Semiannual		Annual		Semiannual		Annual		Semiannual	
			A1 (mm)	Phi (deg)	A2 (mm)	Phi (deg)	A1 (mm)	Phi (deg)	A2 (mm)	Phi (deg)	A1 (mm)	Phi (deg)	A2 (mm)	Phi (deg)
IGN	ign09wd01	1993.0- 2010.0	5.6 +- 0.2	106.9 3.9	5.5 0.3	358.6 3.3	4.7 0.04	319.4 6.7	7.6 0.3	350.9 3.4	2.2 0.9	289.7 47.0	33.5 1.4	357.9 2.5
INA	ina05wd01	1993.0- 2010.0	6.8 0.3	110.3 5.0	0.5 0.4	270.4 57.4	5.4 3.3	317.7 6.7	9.4 0.4	353.2 3.1	27.2 1.0	291.1 5.0	6.3 0.5	303.8 23.0
INA	ina10wd01	1993.0- 2010.0	4.7 0.4	100.2 6.4	5.6 0.4	350.6 5.3	4.6 0.2	307.4 17.5	11.4 0.8	347.2 6.0	6.2 2.9	261.8 19.8	30.2 2.1	351.3 5.5

One manuscript was sent to *Advances in Space  
Research Journal*.

Current status: under review