



IVS' contribution to the ITRF2004 – Results & Validation

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VLBI – group of the Geodetic Institute of the University of Bonn

IVS CPP activities:

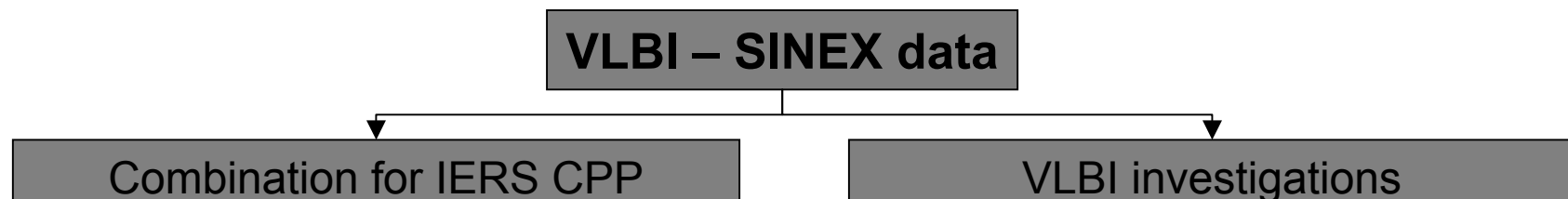
Analysis centers and software:

AC:	Software:	Method:
AUS	OCCAM (Kalman)	Kalman filter, VC-matrices
BKG	CALC/SOLVE	GMM, datum free NEQs
DGFI	OCCAM (LSM)	GMM, datum free NEQs
GSFC	CALC/SOLVE	GMM, datum free NEQs
MAO	SteelBreeze	Square root information filter, datum free NEQs
SHA	CALC/SOLVE	GMM, datum free NEQs
USNO	CALC/SOLVE	GMM, datum free NEQs

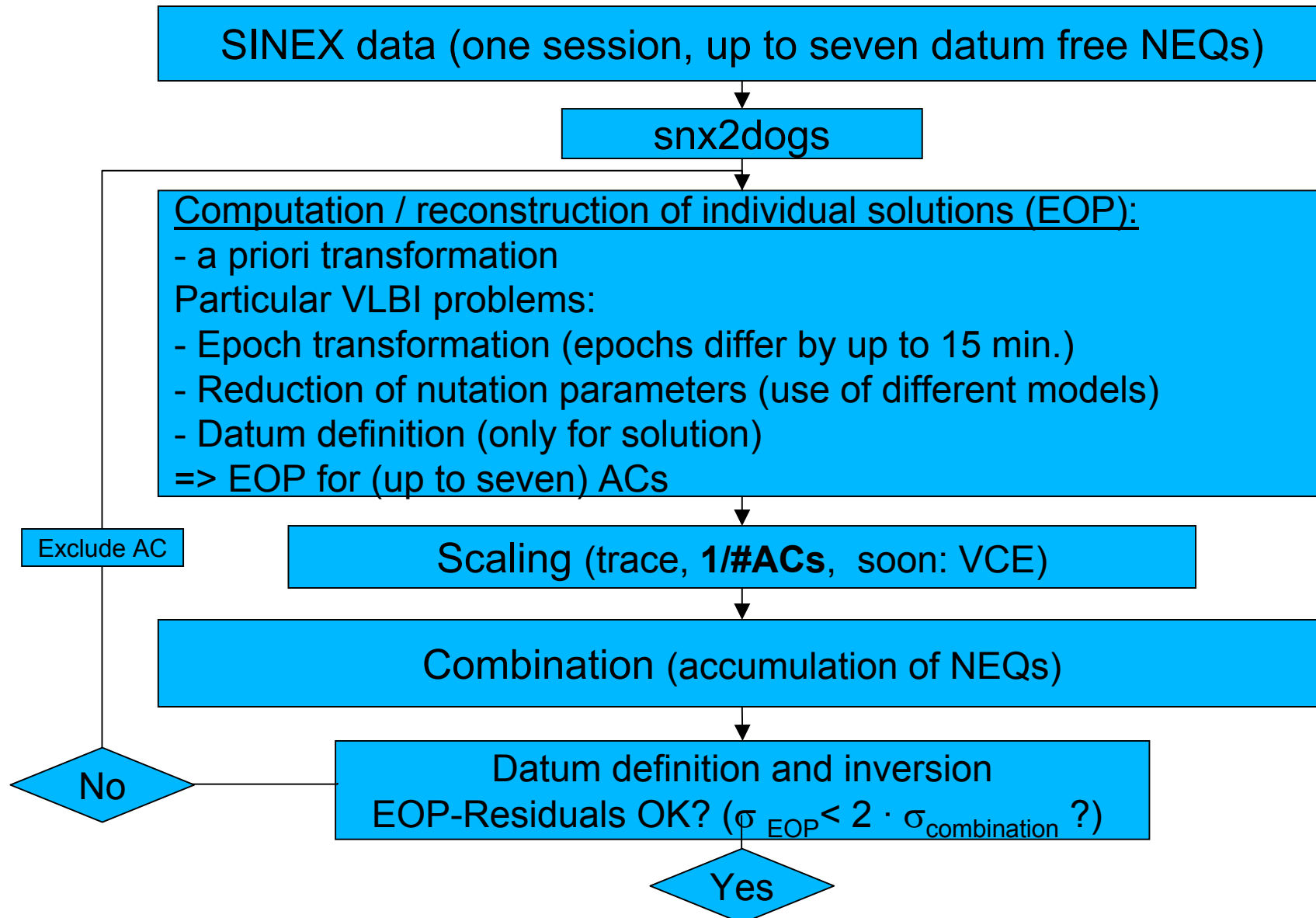
⇒ About 4100 sessions (1980-now) analysed by (at most) seven analysis centers

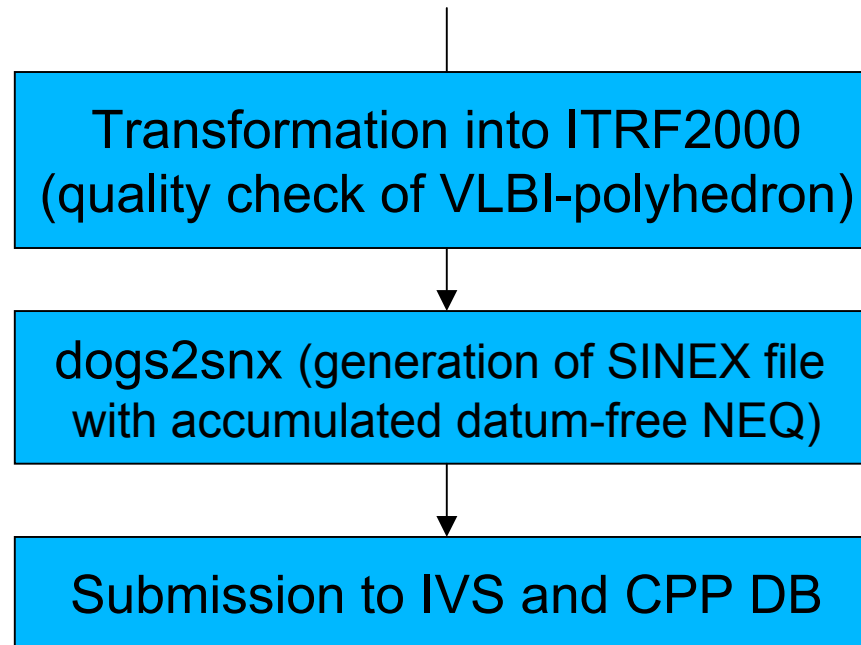
Online list of processed sessions (updated every day):

http://vlbi.geod.uni-bonn.de/sinex_combination/SINEX_statistics.html



VLBI - Intra-technique combination (GIUB for IVS):





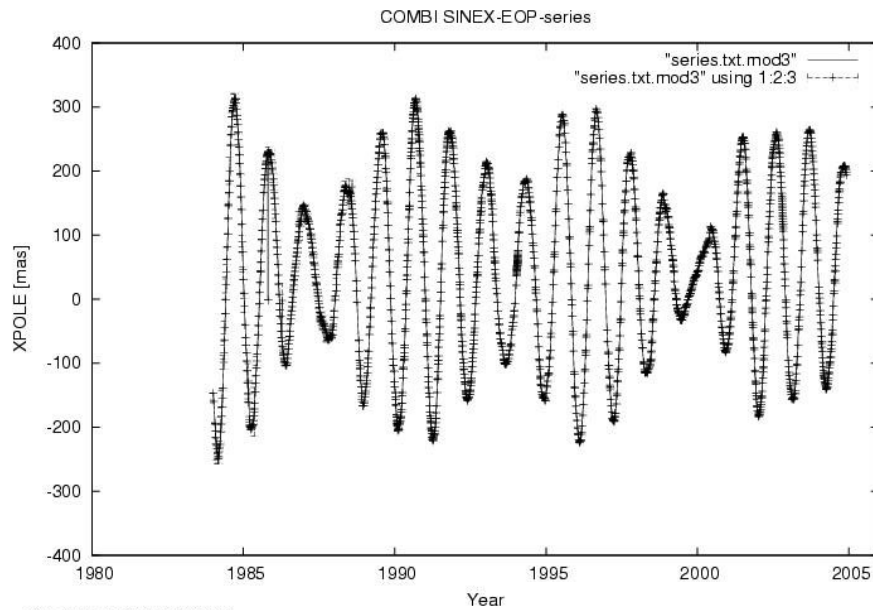
IVS combined about 2050 VLBI sessions:

- Parameters: EOP (polar motion, dUT), EOP-rates, Nutation excluded
- some problems with AUS and MAO (outlier check failed)

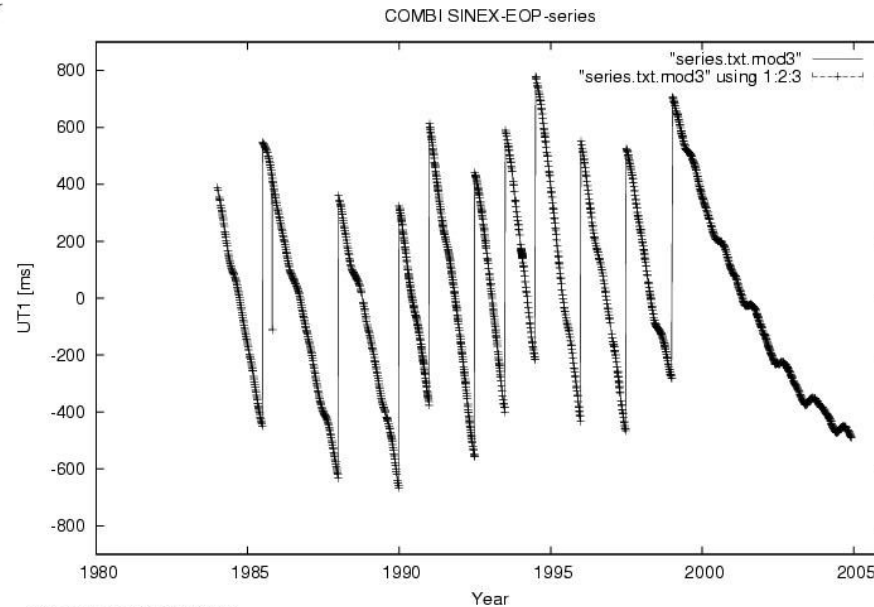
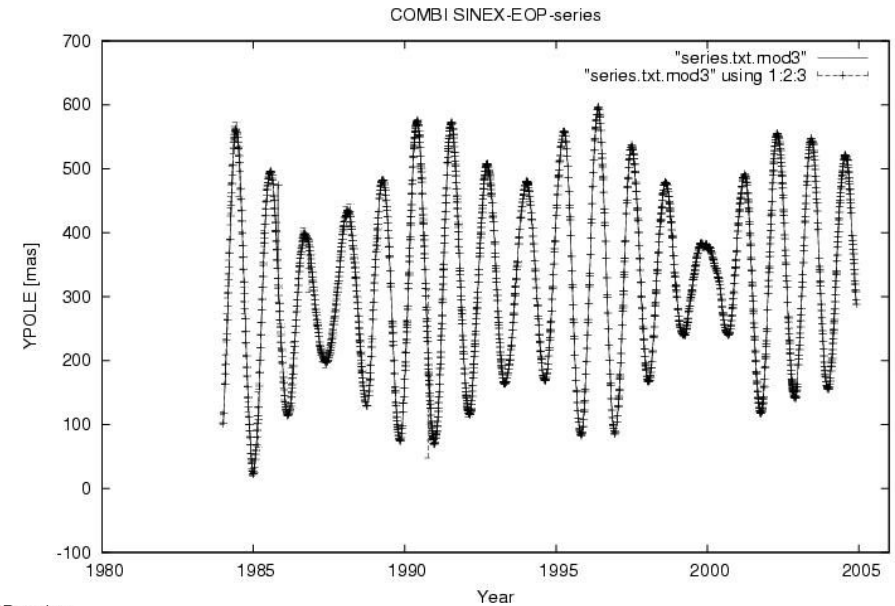
(Hopefully) final version of the combined sessions is just being tested at DGFI and IGN



VLBI - EOP series derived from SINEX data:



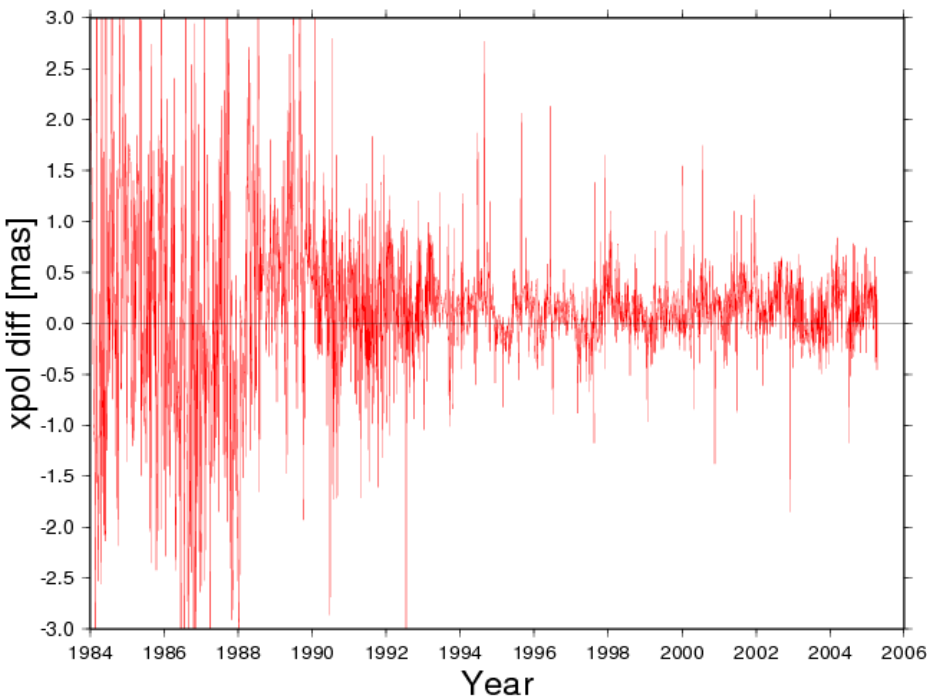
Tue Apr 12 13:00:02 2005



Tue Apr 12 13:01:24 2005

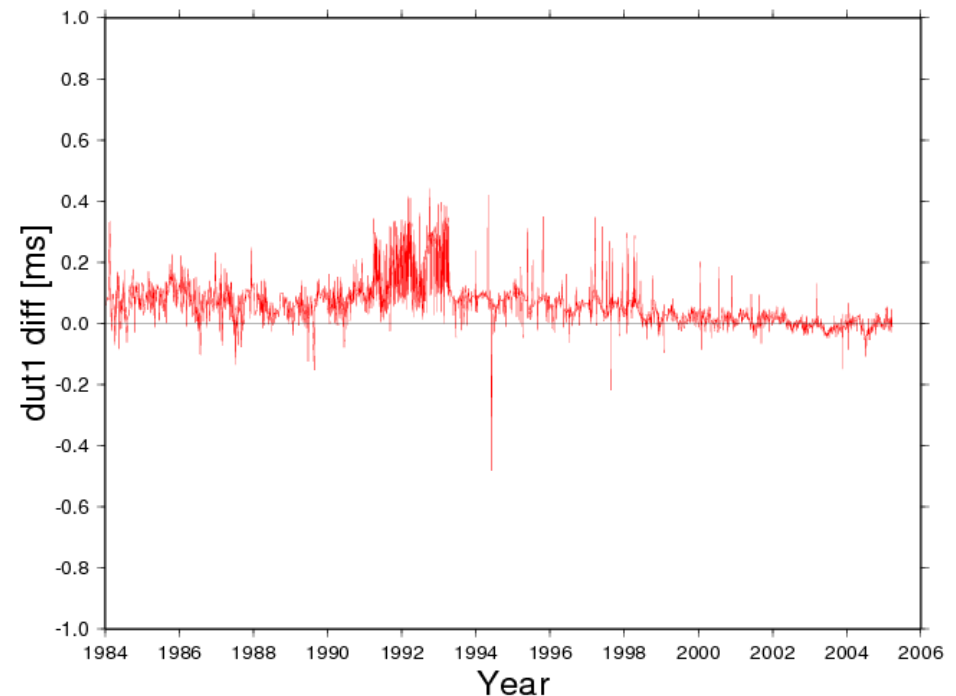
Differences between EOP series (VLBI-SINEX – C04):

C04 - SINEX COMBI



Large differences most likely
because of datum definition

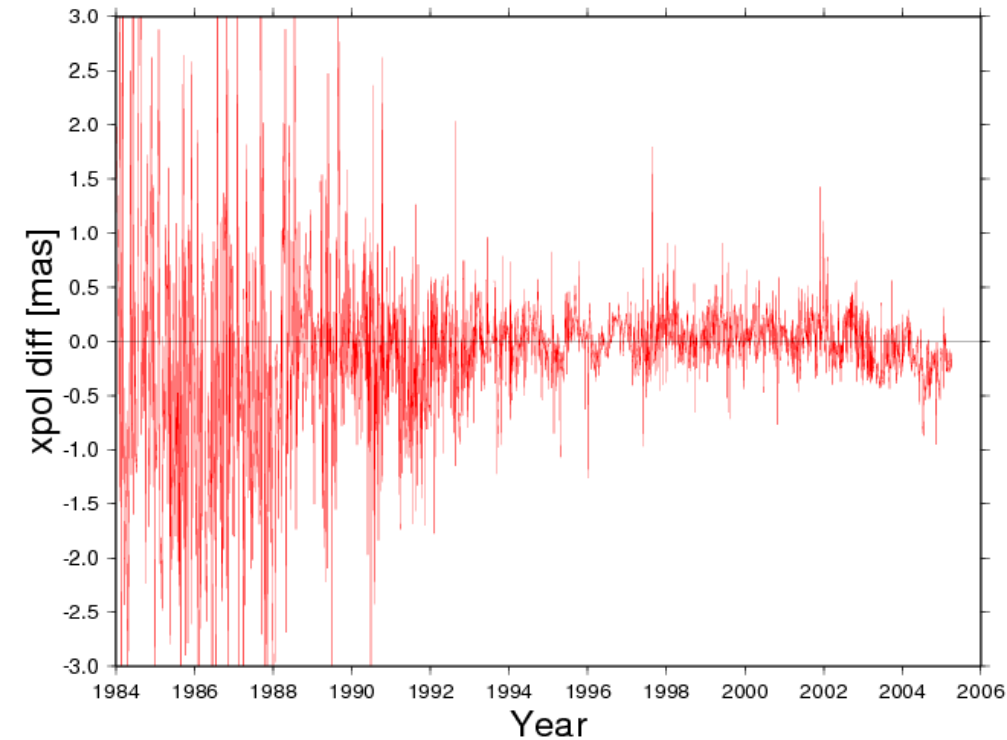
C04 - SINEX COMBI



Differences between EOP series (Example: BKG-SINEX – BKG-EOPS):

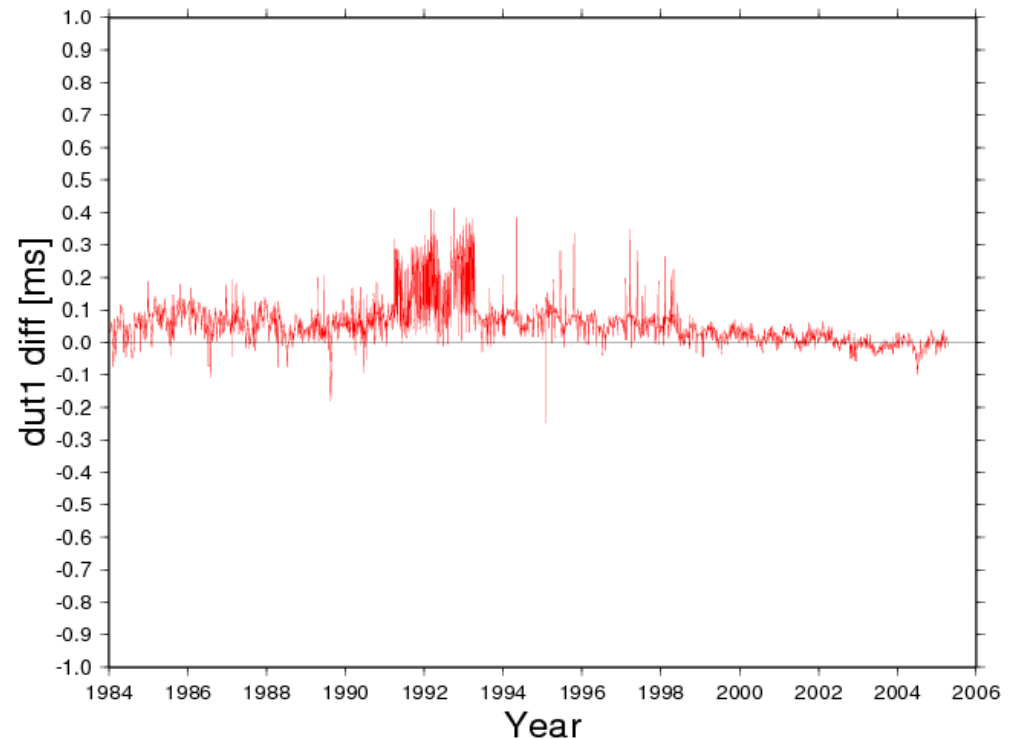
BKG

(y pole similar)



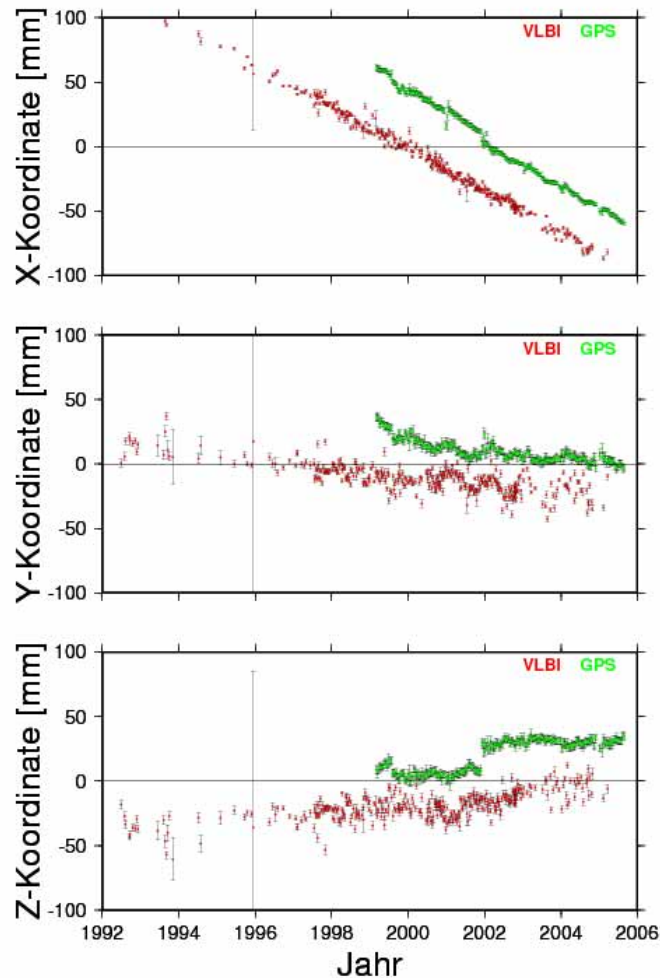
Large differences most likely
because of datum definition

BKG

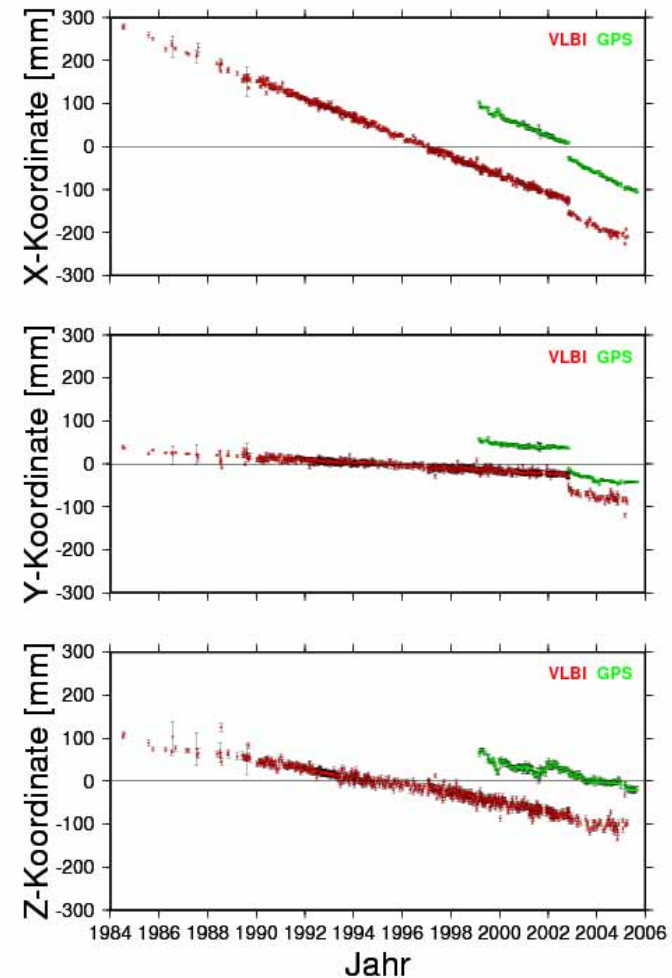


Time series of station components (combined VLBI-SINEX – data vs. GPS):

ALGOPARK



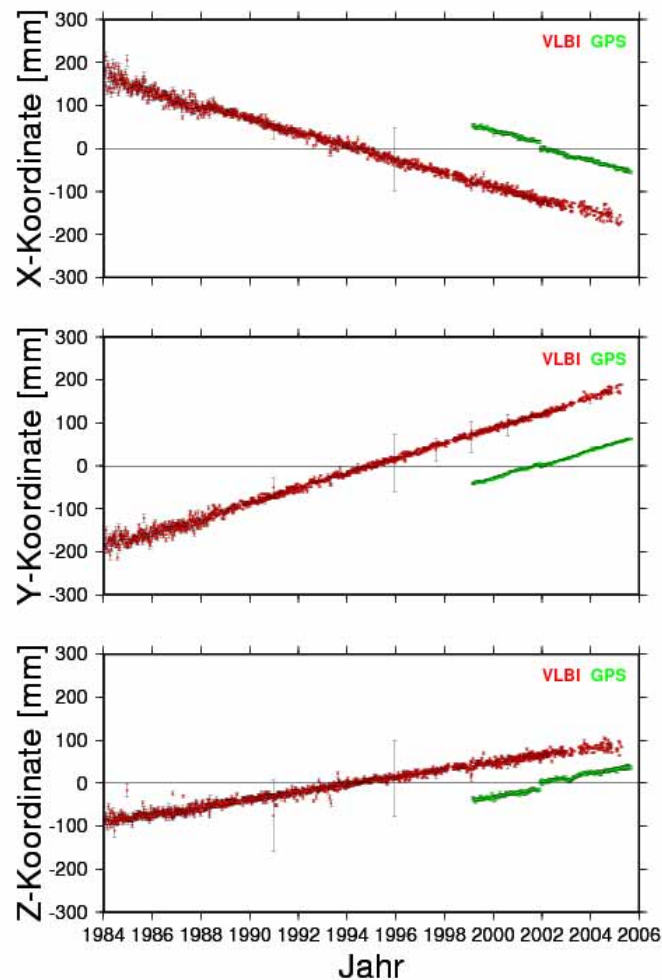
GILCREEK



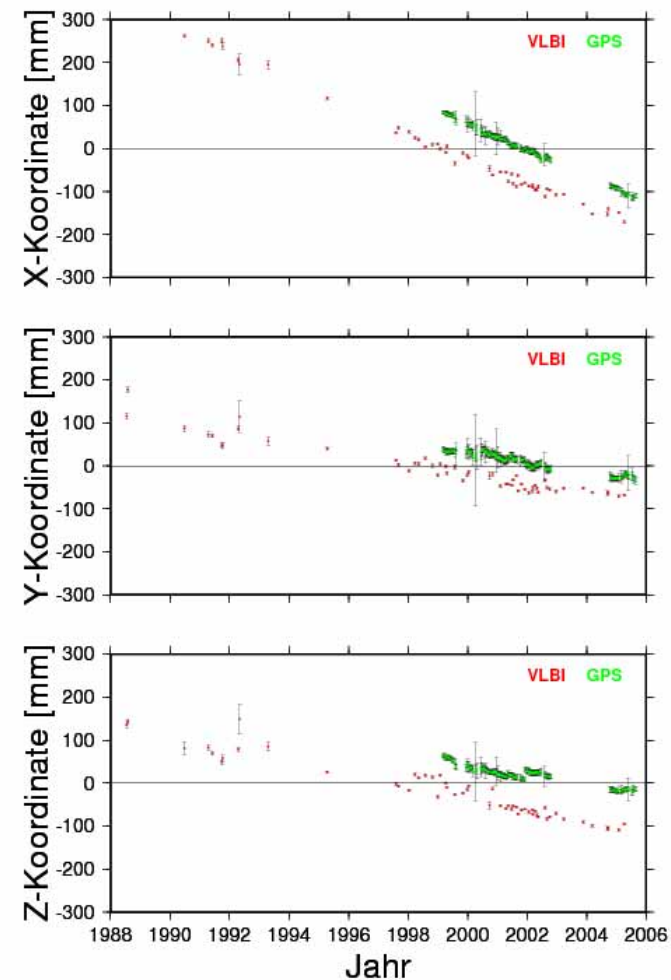


Time series of station components (combined VLBI-SINEX – data vs. GPS):

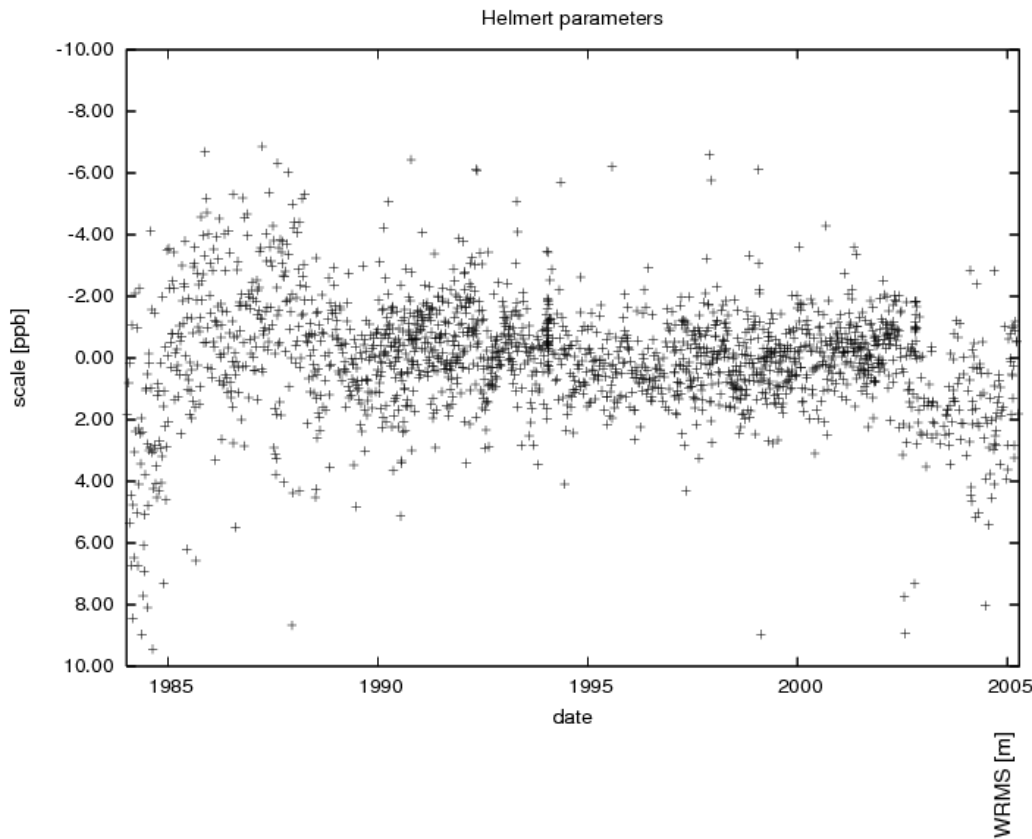
WETTZELL



SESHAN25

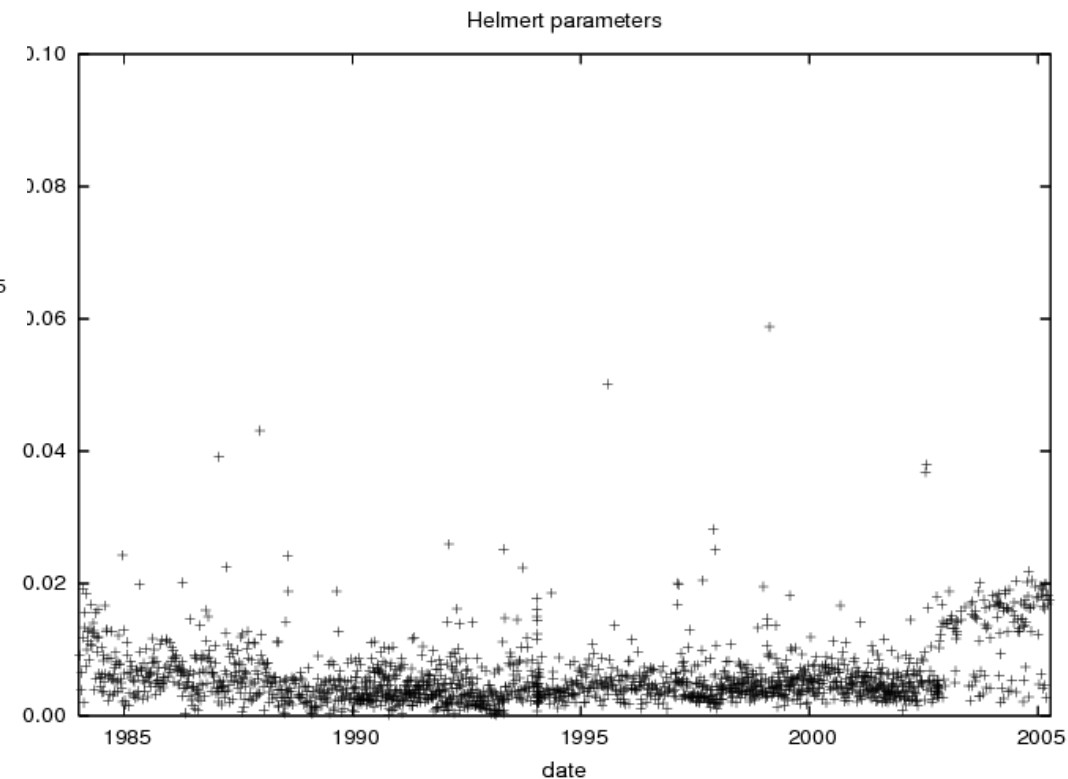


Parameters of Helmert transformation (combined solution vs. ITRF2000):



Scale (no seasonal effects)

WRMS



Problems and future tasks:

- use of identical models for nutation
- „0 UTC problem“
- weighting by variance component estimation (VCE)
- Further investigations of VLBI EOP series (offsets caused by use of different TRF?)
- ...

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