



Federal Agency for
Cartography and Geodesy

BKG's Contribution to the ILRS Pilot Project on Systematic Errors

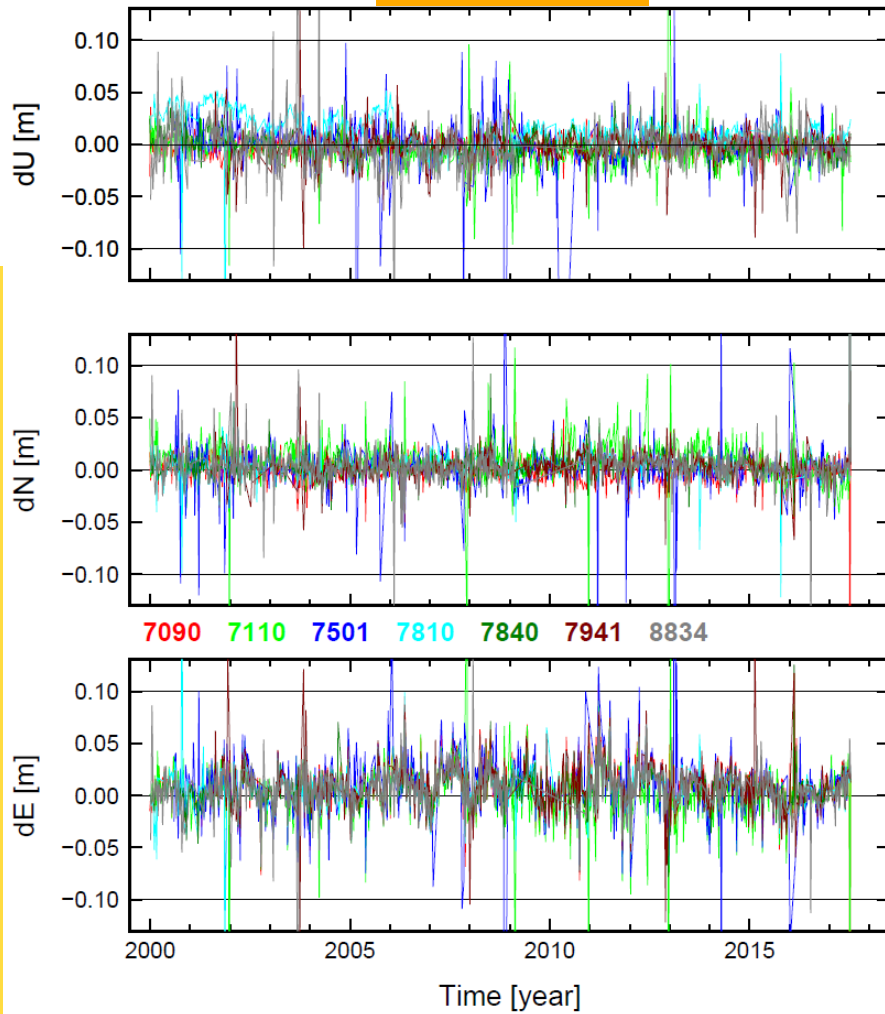
Daniel Koenig, Andrea Grahl, Daniela Thaller

BKG Solutions: Characteristics

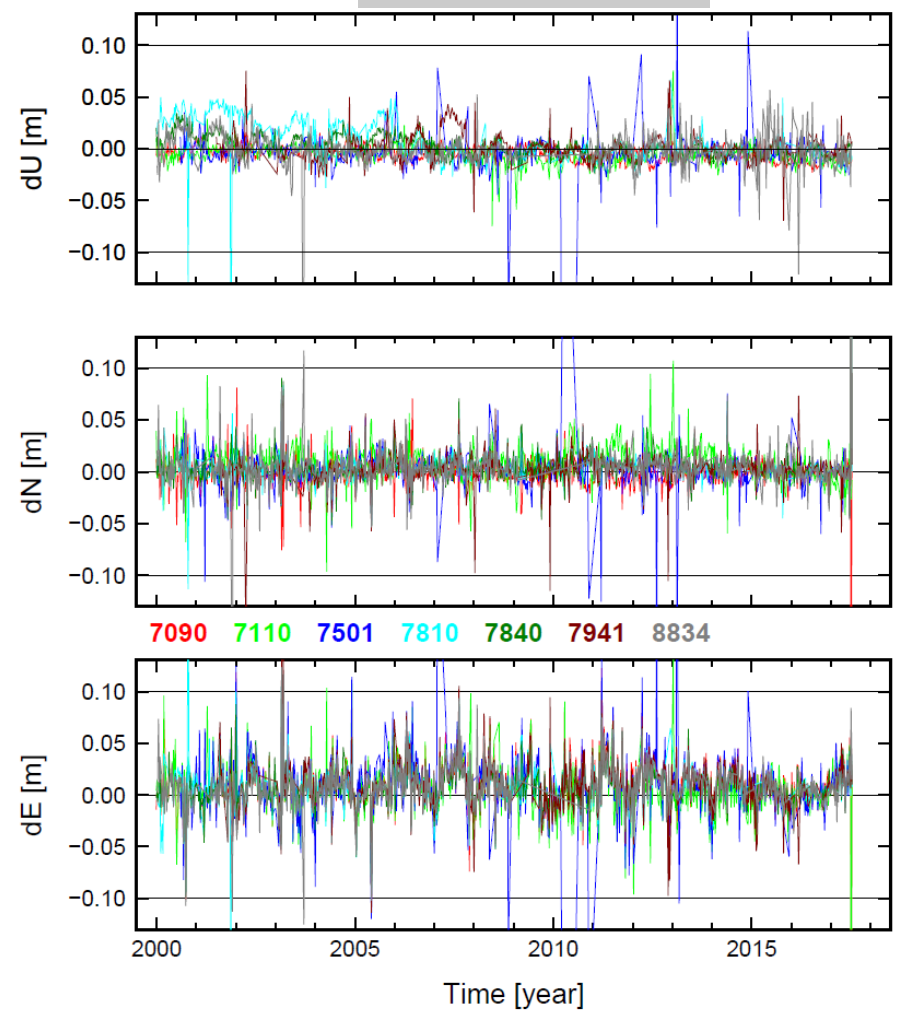
- PP (BKG):
 - Lageos1 + Lageos2
 - Separate RB (L1, L2) for *each* station
 - ILRS req.: 2005-2008, extended to 2000.0-2017.5
 - loose-constraints
- STAND (BKG):
 - Lageos1 + Lageos2, 2000-2017
 - combined RB for *selected* stations only
 - loose-constraints

Results: Station Positions

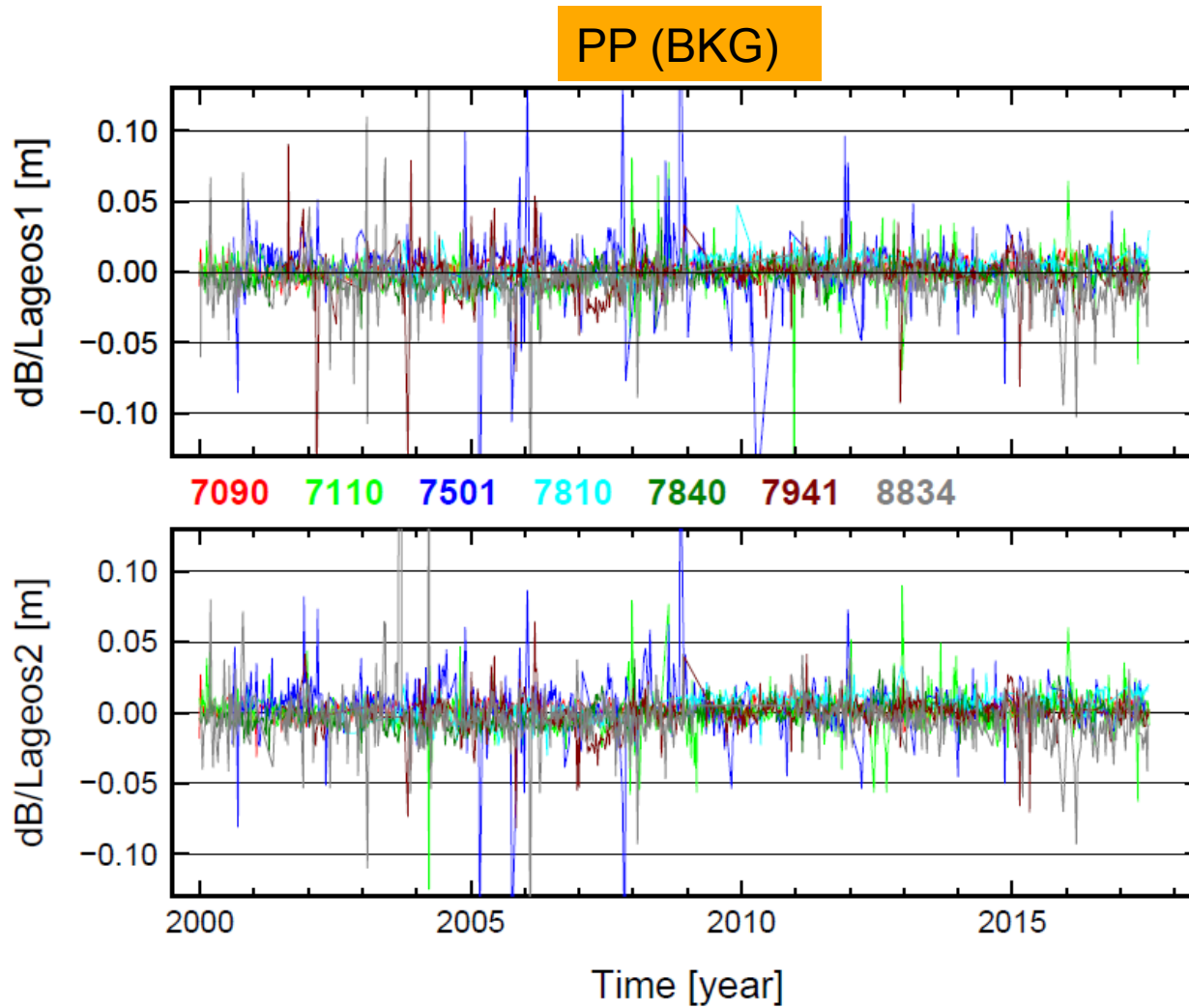
PP (BKG)



STAND (BKG)

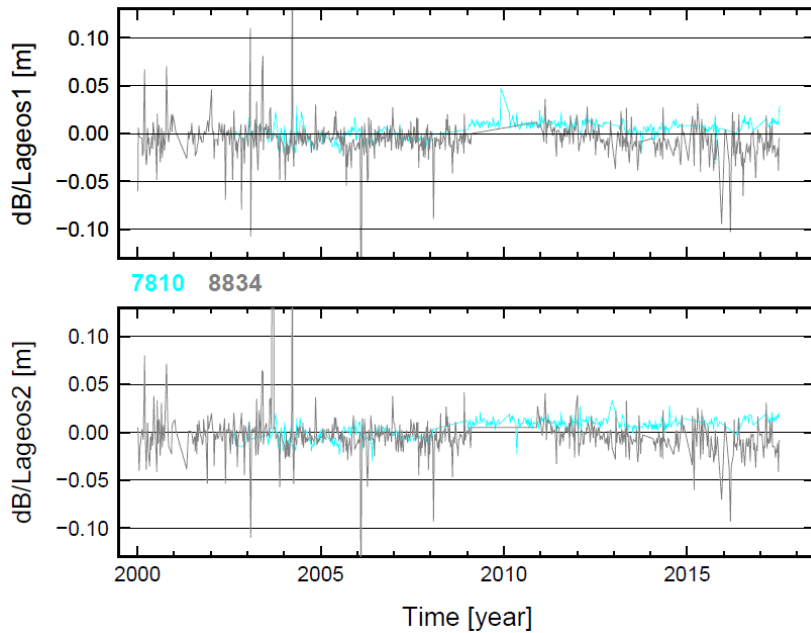


Results: Range Biases

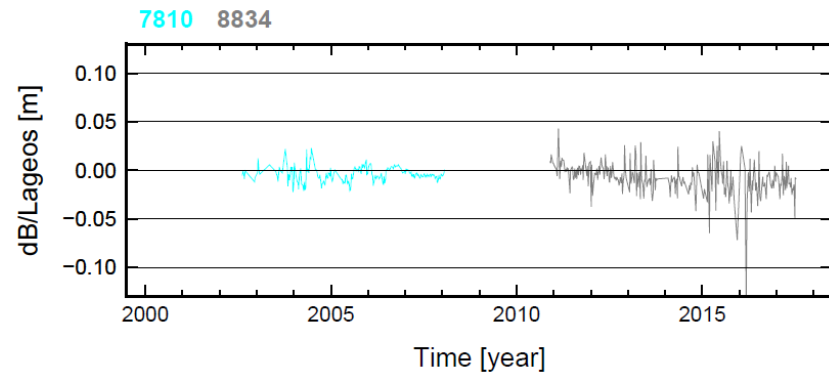


Results: Range Biases

PP (BKG)



STAND (BKG)

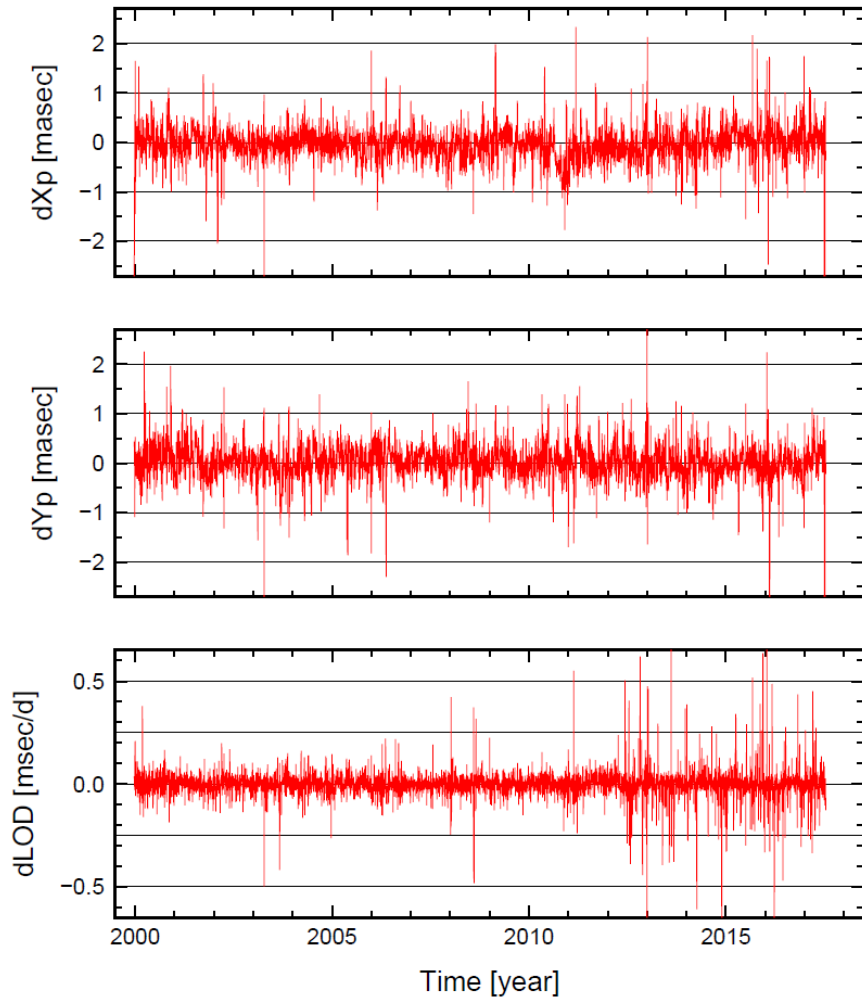


7810, 8834

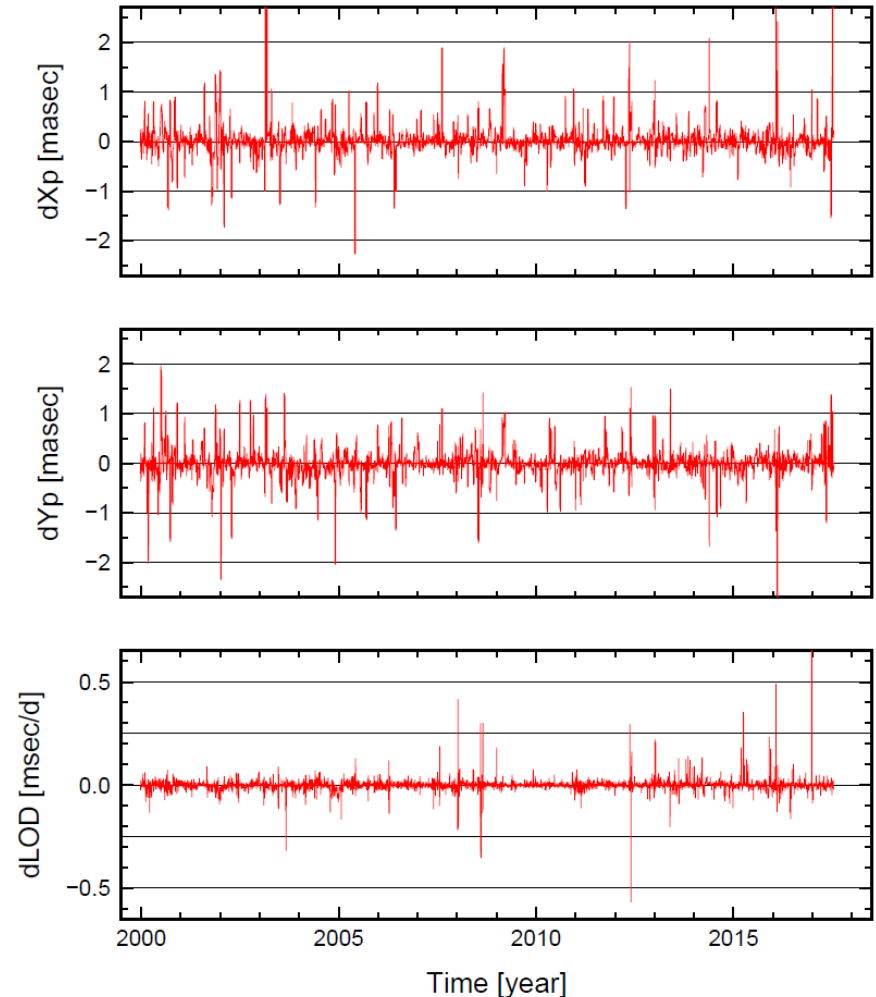
- also in STAND (BKG) solution
- no significant difference wrt PP (BKG) => stable estimates

PP(BKG) Results: ERP

PP (BKG)



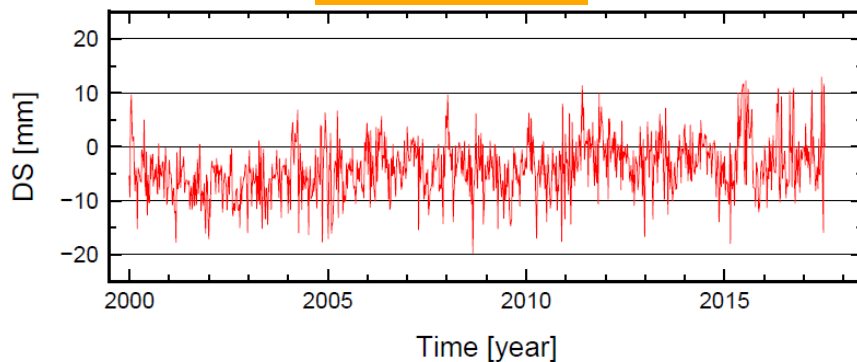
PP (BKG) - STAND (BKG)



- ⇒ Differences as expected for loose-constraints solution
- ⇒ Apparently not affected by additional range biases

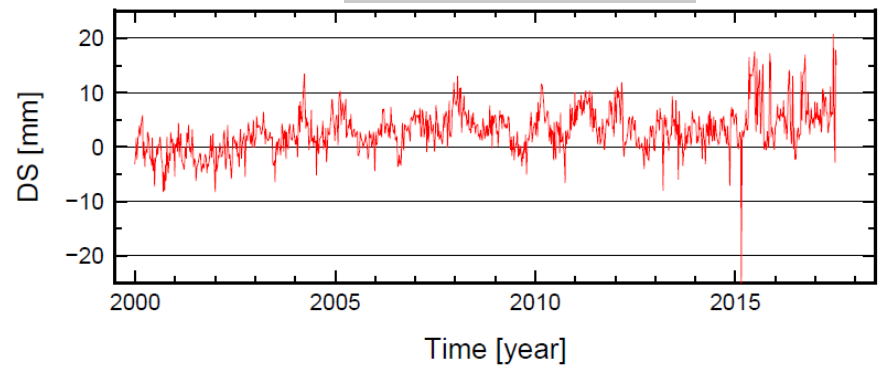
PP(BKG) Results: Scale wrt ITRF2014

PP (BKG)



⇒ Significant mean: ca. -5 mm
⇒ Stable!

STAND (BKG)



⇒ Significant trend: ca. +5 mm/17y

Conclusions

- 2000-2017 processed: PP + STAND solution
- Station Positions:
 - no significant differences in E, N
 - Increased scatter in Up
- RB:
 - no significant changes for 7810, 8834
 - other stations? More detailed study necessary!
- ERP: no significant impact of additional RB
- Scale: significant difference!
 - => Beneficial influence of additional RB
 - stable mean
 - no trend

Contact:

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