

IGS TWG Splinter Meeting

2012 IGS Workshop

24 July 2012

Overview/agenda

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Meeting results in recommendations to
IGS GB (presented Fri)

- Introductions (if appropriate)
- Update on troposphere computation
- WG 2011-2 activities
- Survey results
- Establishing accuracy of IGS FTEs: how?
- How to vote/make decisions?

IGS Final Troposphere Estimates (1)

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- Transferred from JPL to USNO in July 2011
- Estimates made by USNO beginning 17 Apr 2011 (IGS08 ref frame)
- Dr. Sharyl Byram, project manager
- Old: *GIPSY*. New: *Bernese*. Both PPP.
- Tested 25 d of estimates over 18 stations, comparing ZPD/Ngrad/Egrad, IGSFTE (JPL) vs USNO (test) prior to transfer.
- ~ 1 mm ave, < 3 mm stdev agreement

IGS Final Troposphere Estimates (2)

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- Yoaz/Urs H. reviewed, approved.
- Transfer proceeded.
- Models/input (see Poster 06-01):
 - ▣ PPP; IGS Finals as input
 - ▣ 7° elevation mask; GMF; 1 mm ZPD/ 0.1 mm gradient a priori sigma
 - ▣ 5 min estimate spacing of ZPD, gradients
- Three-week latency
- Quality screening implemented
- About 300 stations daily

IGS Final Troposphere Estimates (3)

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- Plans:
 - Repro 2
 - Consider implementing recommendations of TWG
 - GLONASS?

WG organizational activities

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- (See IGS Tech Report 2011; we have chapter)
- Apr 2011 GB:
 - ▣ “What should I do?”
 - ▣ “Whatever you want. Need new charter.”
- Wrote new charter (approved by GB 12/2011)
- Recruited new members (~40)
- Wrote/distributed survey
- Now, it's time to do
- Basic theme: improve accuracy, usability of IGS troposphere estimates
 - ▣ Re-review of charter by WG members to be sure WG supports it?

TWG Survey Results (1)

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- Distributed survey Jan 2012
 - You all know more than I
 - Who works on what?
 - What should WG really be doing?
 - Who can contribute what resources?
- ~ 21 responses (thank you!)

TWG Survey Results (2)

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- Overall themes:
 - Quality/accuracy of answers
 - Sufficient long-term stability for climate change studies?
 - Concentrate using IGS reference stations? Special care taken for LT stability.
 - Rigorous documentation of:
 - Processing parameters
 - Equipment changes at stations
 - Better support for RT tropo production
 - Multi-GNSS solutions
 - Density/spatial distribution of IGS stations
 - IGS website. Oy! (But: make our own: www.igs.org/tropo?)
 - Archive results by station, not day?
 - Find users?
- Resources: several institutions offered computer resources or work time.

TWGW Survey Results (3)

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- Led to decision to address accuracy, decision-making today
- If respondents give permission, could post surveys online. Interest?

Discussion Topic 2: Assessing accuracy of IGS tropo estimates (1)

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- Need accurate uncertainty estimates
- Why:
 - ▣ How do we know we've improved?
 - ▣ Error propagation (if used by others)
- How?
 - ▣ Independent-technique comparisons (VLBI, GNSS, WVR, satellite, numerical weather models)
 - ▣ Inter-GNSS comparisons (GLONASS vs GPS)
 - ▣ GNSS vs GNSS (e.g., compare ACs)
 - ▣ Published comparisons:
 - ~ 5 mm ZTD agreement (sometimes less, sometimes more); latitude/season dependent (worse when humidity)
 - Gradient comparison: hard to do

Discussion Topic 2: Assessing accuracy of IGS tropo estimates (2)

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- What exists now?
 - ▣ Heinkelmann (DGFI) compares VLBI tropo to sat-based and numerical weather models. (Not sure if it includes GNSS... probably)
 - ▣ J Dousa comparing everything to everything.
- What could we implement on an automatic basis that would make it easy to establish and monitor estimate accuracy?
- (Ideas?)

Discussion Topic 3: How Do We Make Decisions? (1)

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- If we have to vote on something, how?
 - ▣ Can we have votes at meetings? Or, **do on-line post-meeting for those who can't attend?**
 - ▣ What is a quorum for conducting a meeting? (representatives from three institutions?)
 - ▣ Who decides to put something to a vote of the membership? (A meeting with a quorum?)
- Who gets to vote? (E.g., one vote/institution?)
 - ▣ Do some votes count more than others, e.g., ACs?
- What majority needed for pass? (2/3?)

Discussion Topic 3: How Do We Make Decisions? (2)

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- Should voting rules be written into WG Charter?
- Why I care: someday we might have to vote on something.

IDEAS? (Draft next page)

Discussion Topic 3: How Do We Make Decisions? (3)

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- Draft ideas:
 - ▣ Need three institutions minimum at meeting for quorum, i.e., in order to propose bringing something for a vote
 - ▣ Meetings can be in person or via telecom
 - ▣ If chair isn't at meeting, proposal to bring vote needs to be approved by chair
 - ▣ Voting conducted by email or online
 - ▣ Voting announced via IGS tropo wg email list
 - ▣ Max two votes/institution
 - ▣ Polling lasts three weeks
 - ▣ 2/3 "yes" needed to implement action
 - ▣ All votes count equally

Recommendation to GB

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- The IGS TWG will develop and document uncertainty estimates for the IGS Final Troposphere Products.
- (Who is responsible for what?)
- By when will this be accomplished?

Backup

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- Provide IWV value?