The Community Geodetic Model (CGM): *Workshop Structure*

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SCEC
an NSF + USGS center

Community Geodetic Workshop
May 30 – 31, 2013

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13:00 – 13:10 Welcome and workshop structure (J. Murray)

13:10 – 13:15 Opening remarks from SCEC Leadership (G. Beroza)

13:15 – 15:00 Session 1: Target Applications for CGM (Moderator: F. Pollitz; Recorder: L. Hearn)
10 minute talks; 35 minutes discussion

1) CGM as envisioned in the SCEC4 proposal (J. Murray)
2) CGM as input for studies of the ductile rheology of the lithosphere: report from May 1-2, 2013 workshop (L. Hearn)
3) CGM as input for developing the Community Stress Model: report from the May 29-30, 2013 workshop (J. Hardebeck)
4) CGM as a time dependent reference frame for transient detection (R. Lohman)
5) CGM as input for hazard assessment (K. Johnson)
6) CGM as input for modeling studies (Y. Fialko, W. Holt)
7) *Discussion: What level of spatio-temporal resolution is needed? What level of precision?*

15:00 – 15:15 Break

15:15 – 16:00 Session 2A: GPS and older geodetic data (Moderator: S. McGill; Recorder: W. Thatcher); 10 minute talks

1) Lessons learned from CMM and summary of pre-GPS data available (D. Agnew)
2) Continuous GPS data for southern California – the PBO combined analysis (T. Herring)
3) Continuous GPS data for southern California – JPL ARIA project (S. Owen)
4) Campaign GPS data for southern California – (M. Floyd)

16:00 – 17:30 Break-out groups: initial brainstorming in preparation for tomorrow's discussions

- What is needed?
- What is possible?
  - Velocity fields and strain rates from GPS and InSAR
  - Time series of crustal motion from GPS and InSAR

18:00 – 19:00 Dinner

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08:00 – 09:00 ***Breakfast***

09:00 – 10:00 Session 2B: GPS and older geodetic data (Moderator: S. McGill, Recorder: W. Thatcher); 10 minute talks; 30 minutes discussion

5) A reprocessed GPS velocity field for the western U.S. (Y. Zeng)
6) Noise in GPS time series 1: Appropriate noise models (J. Langbein)
7) Noise in GPS time series 2: The contribution of random walk noise (K. Dmitrieva)
8) *Discussion: What are major noise sources? How good is our spatial/temporal coverage? What additional sources of GPS data might be available in the future (e.g., new CGPS sites)?*

10:00 – 10:15 Break

10:15 – 11:30 Session 3: InSAR Data (Moderator: J. Murray; Recorder: M. Shirzaei) 10 minute talks; 35 minutes discussion

1) Current data availability in UNAVCO and ASF archives (S. Baker)
2) Limitations and noise sources of current data (D. Sandwell)
3) InSAR time series analysis techniques overview (R. Lohman)
4) Future SAR missions (D. Sandwell)
5) *Discussion: How good is our spatial/temporal coverage? What can we do with what we have? What type of InSAR data are needed to do a good job of recovering things at the few mm/yr scale? To what extent can we mitigate the major noise sources? What opportunities might new missions present?*

11:30 – 12:00 Session 4A: How to bring the datasets together (Moderator: R. Lohman; Recorder: D. Sandwell); 10 minute talks

1) Approaches to combined use of InSAR and GPS
    a. GPS-InSAR integration over the San Andreas Fault System (X. Tong)
    b. High spatial resolution of creeping faults (E. Lindsey)
    c. Spatial and temporal resolution of Hayward Fault (M. Shirzaei)

12:00 – 13:00 ***Lunch***

13:00 – 14:30 Session 4B: How to bring the datasets together (Moderator: R. Lohman; Recorder: D. Sandwell); 10 minute talks; 50 minutes discussion

d. Time series monitoring of deformation (Z. Liu)
e. Combined software tools (R. Lohman)
f. Integration of GPS and InSAR for resolving postseismic deformation (R. Burgmann)
g. How to characterize the errors in the CGM and its components? (G. Funning)

2) *Discussion*
   a. *What would a combined "data product" look like? (E.g., what basic and derived quantities do we want to provide?)*
   b. *How independent are GPS and InSAR-derived observations of crustal motion? What are the strengths and weaknesses of a combined solution?*
   c. *What methodological advances to data analysis/combination would help?*
   d. *What metadata must be provided with the CGM?*

14:30 – 14:45 Break

14:45 – 16:00 Session 5: Development of milestones and a prioritized task list; distribution of tasks among participants (Moderator: D. Sandwell; Recorder: R. Lohman)
10 minute talks; 55 minutes discussion

1) Do we need additional data? Where? (W. Thatcher)
2) *Discussion*
   a. *What are the basic building blocks that must be completed first?*
   b. *Who is already conducting work that contributes to this? How to encourage additional participation (e.g., through RFP)?*
   c. *How do we keep the CGM up-to-date in the out-years?*
   d. *Revisit and revamp the milestones*

16:00 Adjourn