

# **The SCEC Community Geodetic Model (CGM) workshop report**

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# Community Geodetic Model

The CGM will be a comprehensive geodetic time series data product that leverages the complimentary spatial and temporal features of Global Positioning System (GPS) and Interferometric Synthetic Aperture Radar (InSAR) data.

The CGM will provide a reference frame for a variety of SCEC research including development and testing of *the Community Stress Model*, transient detection algorithms, and studies of time-varying deformation.

## GPS:

- Comparisons of continuous GPS time series solutions from several different analysis centers show very good agreement.
- Investigating approaches for combining the processing centers' time series into a single time series solution (averaging or Kalman filter approach.)
- Ongoing reprocessing of campaign GPS data.
- Discussing strategies for estimating derived quantities such as secular rates, seasonal signals, offsets, and transient deformation, and their uncertainty.

## InSAR:

- Comparisons of deformation rates for a given track covered by ERS and ENVISAT data (LA to Mojave Desert) for a given time span.
- Differences between processing methods that do/don't use GPS data to constrain the large-scale deformation.
- Planning a GPS-constrained InSAR velocity product.