Please download the latest release of iGPS.

```
/_
  |__iGPS-2016nov25/        ;iGPS released on 25 November 2016
  |                         ; *)add ftk (Fortran ToolKit)
  |
  |__iGPS-2016jan22/        ;iGPS released on 22 January 2016
  |
  |__iGPS-2016jan05/        ;iGPS released on 05 January 2016
  |
  |__iGPS-2015jun10/        ;iGPS released on 10 June 2015
  |
  |__iGPS-2015jun05/        ;iGPS released on 05 June 2015
  |
  |__iGPS-2015may21/        ;iGPS released on 21 May 2015
  |
  |__iGPS-2011apr20/        ;iGPS released on APR 20 2011
  |                         ; *)fixed a critical bug in time series modeling;
  |                         ; *)introduced new features
  |
  |__iGPS-2011apr18/        ;iGPS released on APR 18 2011
  |                         ; *)some new features; bugs fixed
  |
  |__iGPS.tar.gz            ;the first release (source, example, and document); obsolete
  |
  |__iGPS.src.tar.gz        ;only source files (*.pro); obsolete
  |
  |__iGPS.doc.tar.gz        ;only document; obsolete
  |
  |__iGPS.example.tar.gz    ;only example data files; obsolete
```

Cheers,
Yunfeng Tian (tianyf@gmail.com)
http://gps.xinbaibaihuo.com (offline temporary)

Directories

```
$(iGPS)/
        cmc/ *common-mode component(CMC) analysis
            cmc/ *CMC extraction
            corr/ *calculate time series correlation
            stacking/ *traditional regional stacking filtering
        data/
             clean/ *remove outliers
             map/ *create map
             model/ *perform time series modeling
             plot/ *plot time series
             read/ *read varied data formats
             site/ *routines dealing with site information
             stat/ *statistics
             utility/ *extra data manipulation tools
             write/ *write output files
        doc/ *mannual and tutorial
        example/ *processing samples
        ftk/ *Fortran tool kit for manipulating GNSS time series, etc.
        libtian/ *common routines
        main/ *iGPS GUI and event handler
        sh/ *various Unix-like shell script for GNSS data processing
        tables/ *site coordiantes, etc.
        tools/ *auxiliary routines
```

Known Issues

There are a few known issues with iGPS, however, as of now I have no time and/or knowledge to resolve these. I will try to fix these issues when possible.

+ iGPS program hangs sometimes without any error messages. The causes are unknown. Therefore, please save your critical data (e.g. offset list) frequently, to avoid data loss.
+ All operations are supposed to run in the time axis of decimal year (dyr). The use of JD or Modified JD is not recommended. For example, avoid using "jd" or "mjd" as time axis when defining offset/psdecay events.
+ An issue is found on high DPI display.
  The time series plot areas will be much smaller than the window if the a scaling level other than 100% is set, e.g. 125% or 150%, which is the default for modern Windows OS on high-definition screens.
  A resize of the window will make the drawing areas to fit.

Major Update History

2016NOV25

  + Add the Fortran ToolKit (ftk) to iGPS package. ftk is a collection of unix
    shell scripts and Fortran 77 programs which can help in running GAMIT/GLOBK
    , converting time series, filtering temporal-spatial CMC, etc.

2016NOV02
  + Change the longitude range of output KML file to -180 ~ 180.
    Otherwise, some sites may not appear in certain version of Google Earth.

2016OCT25
  + Remove NaN data values when reading.

2016JUN08
  + Add support for reading displacement time series from EOST Loading Service
      (http://loading.u-strasbg.fr/).

2016MAY12
  + Add subroutines to convert GPS velocities into Google Earth KML format,
      with arrow head and error ellipse (iGPS\data\plot\error_ellipse.pro
      and iGPS\data\plot\gps_vel_to_kml.pro).
      Input GPS velocity format:
*Station   Longitude   Latitude Ve_init Ve_incr   Ve   dVe   Vn_init Vn_incr   Vn   dVn   Cen
 BMCL_GPS   81.7100   28.6600   0.000   0.000   6.700   0.530   0.000   0.000 32.400   0.530 -0.0108
...
      The velocities (Ve and Vn) and their uncertainties (dVe and dVn) are used.

2016APR11
  + Add support for viewing SIO RAW XYZ files (e.g. ftp://garner.ucsd.edu/pub/
     timeseries/measures/rawXyzTimeSeries.Measures_Combination.20160326.tar.gz)

2016MAR20
  + Fix a bug of not removing postseismic decay when showing the residual.
     The old code cannot handle the "all" sitename in psdecay definition file.
  + Fix a bug of not showing modeled curve when "Preview Reslut" checkbox is
     set in "Outlier" panel.
  + Fix a bug when searching outliers when there are offsets in time series.
     The old code use the same offsets for all three components. Now fixed.

2016FEB06
  + Fix a bug when view the residual for other formats (e.g. PBO *.pos NEU).
     The old code will return null plots if switch site in the residual view.
  + Add support for GPS Lab time series format(http://gps.earth.sinica.edu.tw/).
     No formal errors in the time series files.

2016JAN22
  + Add support for reading *.dat files of 1st Crustal Deformation Monitoring
    Center (YICE), China Earthquake Administration (CEA).
  + Add a menu tool for correcting offsets by using averaging adjacent positions
    of the two sides of one jump.
  + Fix a bug when reading offset/psdecay definitions.
    If no component is given in the definition file and there are comments,
    e.g.
      ^ offset kmin 2010.00137000   ;--SZWIN_RIGHT=5 ,
    the old code cannot read it correctly.

2016JAN20
  + Fix a bug when writing filtered time series in "Extract CMC (CWSF)" tool.
    For any day:
      - CMC is written, if CMC is obtained for any of the three components.
      - The filtered data is written only if all three components are corrected
        (note: not the case in previous version).

2016JAN06
  + Add WRMN/NRMS statistics for rate estimation.
  + iGPS now outputs realistic sigmas for rate estimation (realistic sigma code
    ${iGPS}/data/model/realistic_sigma.pro is revised from GGMatlabs's
     counterpart version--CalcRealSigma.m).

2016JAN05
  + Improved the performance (speed of plot, time conversion, etc.).

2015DEC30
  + Improved the estimation of seismic displacements (ts_model.pro).
  + Add support to merge offset/psdecay/slope headers (in Model) for CMONOC
    time series processing.
  + Add support to add trend/annual/semiannual/offset/psdecay to the residual
    time series.
  + Add lsq_velo (similar to QOCA's format) line to residual file header.

2015OCT21
  + Revised libtian\vector\read_polygon_psxy.pro.
  + Use the decimal year (instead of year/doy) to derive MJD.

2015Jun10
  + Add example data for CMC extraction using PBO data.
  + A few bug fixes and improvements.

2015Jun05
  + Add example data for 25 April 2015 Mw7.8 Nepal earthquake.

2015MAY09
  + Add the menu and function of calculating inter-station correlations among
    cGPS position time series. Add cmc/corr/ts_correlation.pro.
  + Add the menu and function of extracting common-mode component (CMC) signals.
    Add cmc/cmc/*.pro files.
  + Improved the efficiency of calculating the intersect of two data sets
    (updated libtian/array/set_intersect.pro).
  + Enable the draw areas to fit automatically resized window.
  + Add utility for smoothing time series (data/utility/neu_smooth.pro).

2015APR10
  + Update support for new PBO time series format (from V1.0.2 to V1.1.0).

2014NOV24
  + Add the menu and function.

2014APR01
  + Add support for SIO NEU ATS file format. More information about ats format
    can be found at
    http://garner.ucsd.edu/pub/timeseries/measures/ats/ATS_TarFile_README.txt
    and http://qoca.jpl.nasa.gov/advclass/tsa_intro.html.

2013NOV03
  + Add support for ISCEA time series format.
    ISCEA: Institute of Seismology, China Earthquake Administration.

2012DEC13
  + Add support for GSI format
    (ftp://terras.gsi.go.jp/data/coordinates_F3/2010jb007567/pos/).

2012APR24
  + Add checkbox buttons for offset/psdecay restoration to import epochs for
    (all / just those in list) sites.
  + Bug fixed: when the first epoch is outlier, it remains in the time series.

2011NOV18
  + RDSIT: A bug found and fixed when there is only one site name in the iGPS
    site list file (*.sit). Without the fix, iGPS will return none when there
    is only one site in the file.

2011OCT07:
  + The residual (radio button (o raw *resid)) will not show when all the
    offset list epochs are outside current time axis. Fixed by tianyf.

2011OCT02:
  + Fix a bug when the time span is fixed. iGPS now can remove points with
    larger sigma when the time axis is fixed.

2011MAY07
  + Fix some bugs in "Quick Site Map" utility.

2011APR20
  + Switch to QOCA network file (*.net) for apriori coordinates.
    The iGPS LLHXYZ file (*.llhxyz) is now obsolete.
  + Add Postscript output (*.ps) support for Quick Site Map tool.
  + More reasonable y-axis range when large position sigma (say, >100mm) exist.