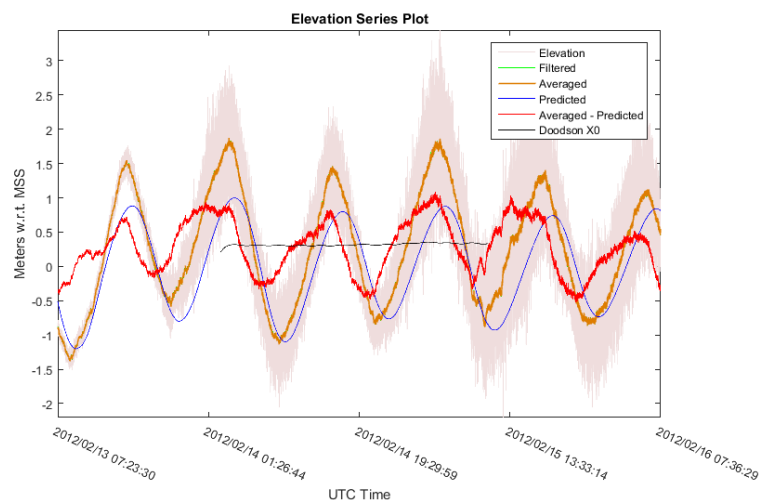


## C-Tides<sup>®</sup>

### Worldwide ocean tidal data from GNSS measurements

Since the early days of GNSS, it has been the dream of hydrographers to exploit the height ordinate to derive real-time tide information.

C-Tides<sup>®</sup> combines the exceptional real-time accuracy of Precise Point Positioning (PPP) corrected C-Nav3050<sup>®</sup> height measurements with the latest in global MSS and MSL models. This produces real-time tidal data of exceptional accuracy when out of range of traditional shore based tide gauges.



#### FEATURES

Choice of geoidal or satellite altimetry models

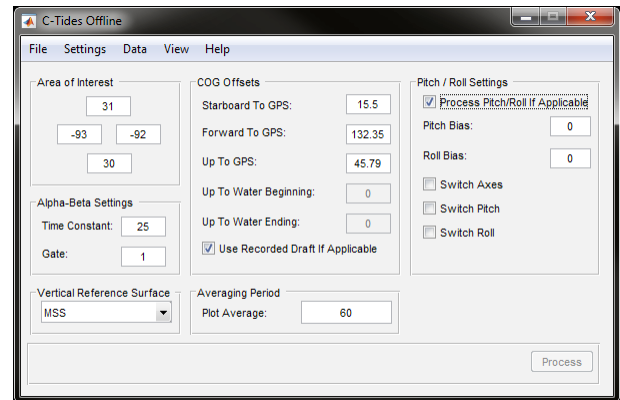
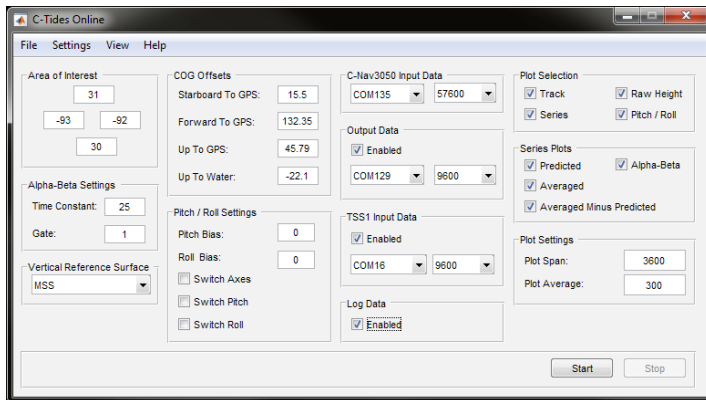
Real-time filtering or measurement of pitch and roll

Includes predicted world tides

# C-Tides®

## IHO Standards for Hydrographic Surveys

C-Tides® results are within bounds for combining with other vertical component uncertainties to achieve IHO SP44 Order 1 or better.



### C-Tides® Online (Real-Time) Features

- » Uses C-Nav3050® binary message stream
- » Unique, real-time alpha-beta elevation filter
- » Outlier Rejection
- » Antenna offsets and draft inputs
- » Prediction tide overlays
- » Choice of models
  - » EGM2008
  - » Mean Sea Surface (MSS)
- » Aided (pitch, roll, heave [TSS1]) or unaided

### Online Plots

- » Raw height data series
- » Filtered height data series
- » Predicted height data series

### Real-Time Logging and Serial Output

- » Immediate data output (no waiting for Doodson X0 filter)
- » Data logged and output in ASCII format
- » All raw and filtered data included
- » MSS/MSL value from selected model
- » Time and position

- For more information: [oceanering.com/cnav](http://oceanering.com/cnav)

### C-Tides® Offline (Post-Processing) Features

- » Uses output from C-Tides® Online or C-Nav3050® logged binary data
- » Boxcar smoothing or alpha-beta filtering
- » Doodson X0 processing
- » Harmonic analysis (14 primary tidal constituents)
- » Manual draft adjustments
- » Plotted and logged data results
- » Comparison of:
  - » Raw, filtered, or smoothed data
  - » Predicted tides
  - » Harmonic generated tides
  - » Doodson X0 sea surface