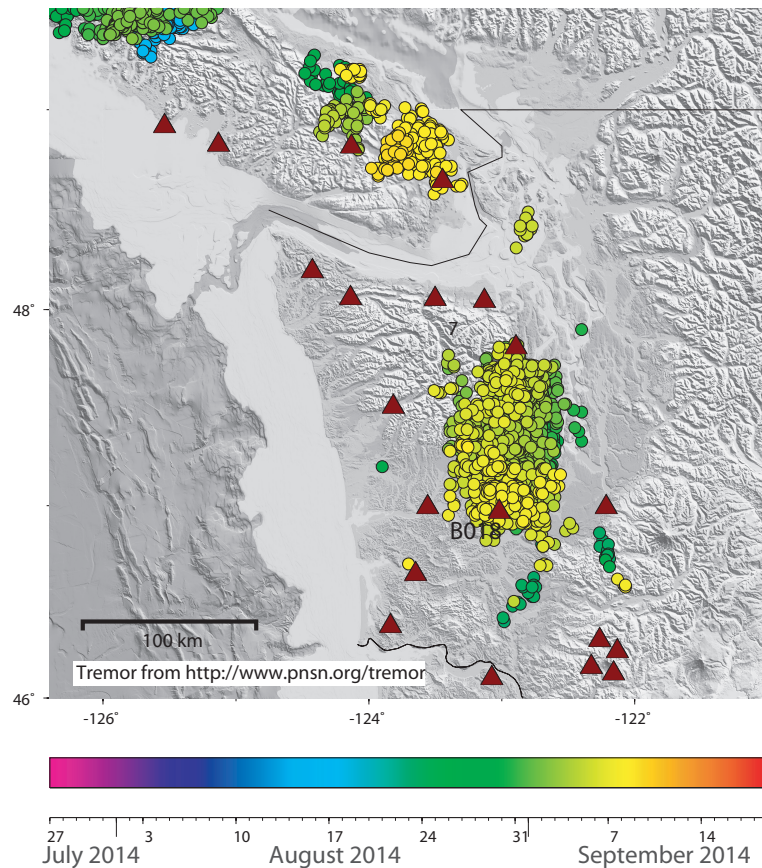
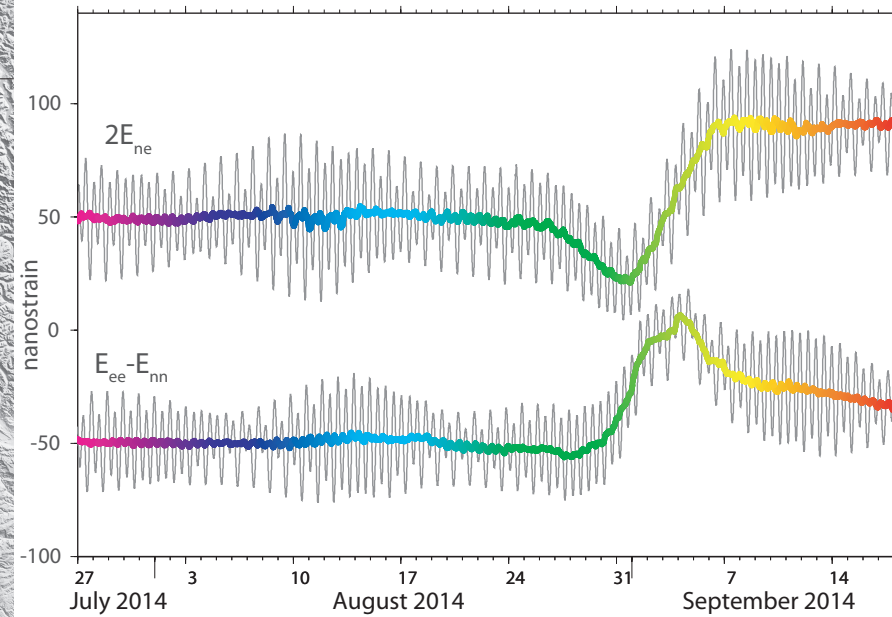


DOWNLOADING LEVEL 2 DATA

Tremor Event September 2014



Shear Strains Recorded by B018, Washington



An Episodic Tremor and Slip Event

<ftp://bsm.unavco.org/pub/bsm/level2/delphi018bor2006/>
Level 2 Processed data

DOWNLOADING LEVEL 2 DATA

Default Level 2 Product: UNAVCO generates 5-min interval processed strain for BSM and LSM

- Gauge measurements in units of strain
- Areal and shear strains
- Earth tide + ocean load corrections
- Very basic trend model
- Barometric pressure correction
- Bad data flagged, offsets estimated

DOWNLOADING LEVEL 2 DATA

The screenshot shows the UNAVCO website's 'Borehole Strainmeter Data' page. The page title is 'XML or ASCII'. A red arrow points to the 'XML | ASCII' link in the 'Processed' column of the data table. The table lists four data sets: B001, B003, B004, and B005. Each row includes links for 'Bottle | SEED | ASCII', 'XML | ASCII', 'LOGS', 'PDF', and 'PLOTS'.

PNUM	Station Name	Installed	Array	Raw	Processed	Drilling	Notes	Time Series
B001	golbeck01bwa2005	2005-06-29	PacificNorthWest	Bottle SEED ASCII	XML ASCII	LOGS	PDF	PLOTS
B003	FloeQuaryBWA2005	2005-06-21	PacificNorthWest	Bottle SEED ASCII	XML ASCII	LOGS	PDF	PLOTS
B004	hokofallsbwa2005	2005-06-15	PacificNorthWest	Bottle SEED ASCII	XML ASCII	LOGS	PDF	PLOTS
B005	shoresnw1bwa2005	2005-07-19	PacificNorthWest	Bottle SEED ASCII	XML ASCII	LOGS	PDF	PLOTS

Default Level 2 Product: UNAVCO generates 5-min interval processed strain for BSM and LSM

We will use the ASCII format

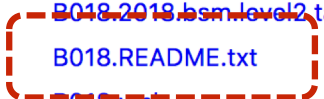
LEVEL 2 STRAIN DATA

File naming convention enables download via cron.

Index of ftp://bsm.unavco.org/pub/bsm/level2/delphi018bor2006/

[📁 Up to higher level directory](#)

Name	Size	Last Modified	
B018.2006.bsm.level2.tar	12784 KB	6/8/17	12:00:00 AM MDT
B018.2007.bsm.level2.tar	14995 KB	6/8/17	12:00:00 AM MDT
B018.2008.bsm.level2.tar	15892 KB	6/8/17	12:00:00 AM MDT
B018.2009.bsm.level2.tar	16140 KB	6/8/17	12:00:00 AM MDT
B018.2010.bsm.level2.tar	16169 KB	6/8/17	12:00:00 AM MDT
B018.2011.bsm.level2.tar	15642 KB	6/8/17	12:00:00 AM MDT
B018.2012.bsm.level2.tar	16116 KB	6/8/17	12:00:00 AM MDT
B018.2013.bsm.level2.tar	15999 KB	6/8/17	12:00:00 AM MDT
B018.2014.bsm.level2.tar	16117 KB	6/8/17	12:00:00 AM MDT
B018.2015.bsm.level2.tar	16058 KB	6/8/17	12:00:00 AM MDT
B018.2016.bsm.level2.tar	15762 KB	6/8/17	12:00:00 AM MDT
B018.2017.bsm.level2.tar	16213 KB	12/31/17	8:10:00 AM MST
B018.2018.bsm.level2.tar	3068 KB	3/12/18	8:10:00 AM MDT
B018.README.txt	4 KB	6/8/17	12:00:00 AM MDT
B018.xml	262 KB	2/21/18	8:10:00 AM MST
B018.xml.txt	220 KB	2/4/14	12:00:00 AM MST



Metadata file

LEVEL 2 STRAIN DATA

We will use `get_strain_l2.bash` in the `CLASS/level2` directory

```
> get_strain_l2.bash B018 2014-07-01 2014-10-01
```

This does the following:

1. Downloads the Level 2 time-series from UNAVCO
2. Selects data for the specified time window
3. Downloads the Level 2 metadata file

LEVEL 2 STRAIN DATA

This creates a directory called **B018**, it contains

B018.README.txt	←	Metadata
B018_Eee+Enn.txt	←	Areal Strain
B018_Eee-Enn.txt	}	Shear Strains
B018_2Ene.txt		
B018_gauge0.txt	}	Gauge Data
B018_gauge1.txt		
B018_gauge2.txt		
B018_gauge3.txt		

LEVEL 2 STRAIN DATA

This creates a directory called **B018**, it contains

B018.README.txt	←	Metadata
B018_Eee+Enn.txt	←	Areal Strain
B018_Eee-Enn.txt	}	Shear Strains
B018_2Ene.txt		
B018_gauge0.txt	}	Gauge Data
B018_gauge1.txt		
B018_gauge2.txt		
B018_gauge3.txt		

- Edited
- Quality marked
- Ready for analysis

LEVEL 2 STRAIN DATA

- Description of data, gauge0, gauge1 etc.
- Date, YYYY-MM-DDTHH:mm:ss
- Day of year
- Modified Julian Date
- Strain (microstrain). No offsets, trends, tides or barometric corrections have been applied.
- Running sum of offsets
- Strain data quality flag (g=good, b=bad, m=missing)
- Tidal correction (microstrain)
- Borehole trend correction (microstrain)
- Barometric pressure correction (microstrain)
- Barometric pressure data quality flag (g=good, b=bad, m=missing, i=interpolated)
- Level, quality (2a= rapid processing, 2b=post processed)
- Version, data generation date
- Barometric pressure (Kilo Pascals)

LEVEL 2 STRAIN DATA

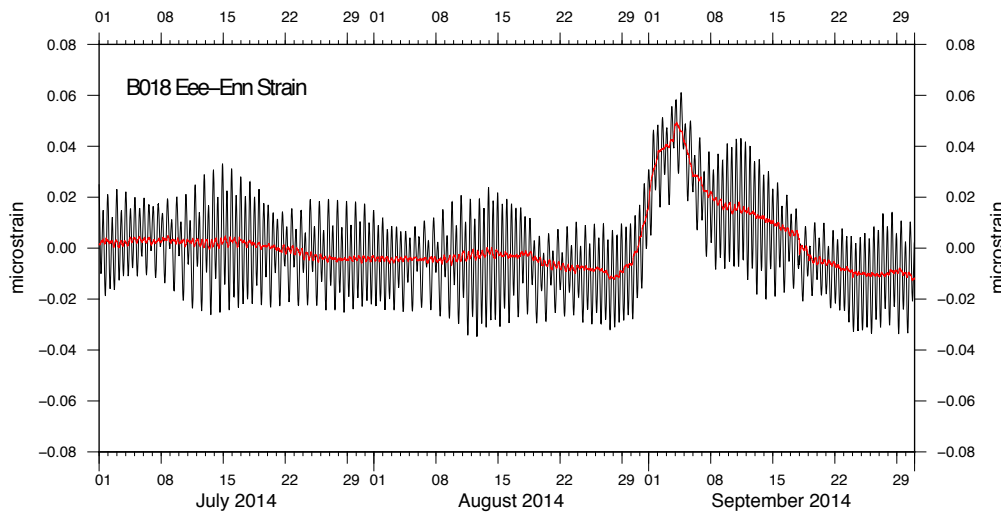
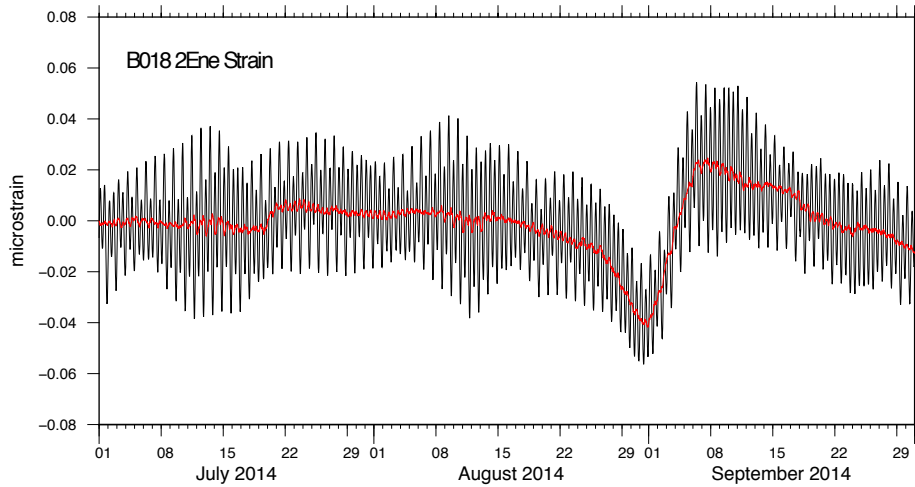
Plot with the GMT script **plot_l2.bash**

```
% plot_l2.bash B018
```

Creates

B018.ps

LEVEL 2 STRAIN DATA



- Shear strains
- Residuals after tides, barometric pressure and trends removed