Site Anthropogenic Noise Injections Follow-up Part III

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Site Anthropogenic Noise Injections (LHO alog 21226)

| Injection	Time of first injection, UTC	Injection spacing	Total number of injections	Good channels for environmental signal
	Sept. 5			
crowd (10 people) walking randomly for 2 or 3s periods in control room	1:39:00	5s	12	HAM2 seismometer, vertex seismometer H1:PEM-CS_ACC_LVEAFLOOR_HAM1_Z
crowd (10 people) walking randomly in hall just outside control room	1:41:00	5s	12	same
External door near control room shutting by itself	1:44:00	5s	12	same
chair rolling in control room (most common chair)	1:46:00	5s	12	same
Single large steps in control room	1:50:00	5s	12	same
Airlock door (door to lab area near control room) shut by hand	1:52:00	5s	12	same
slamming office door (Sheila, Kiwamu, Me)	1:54:00	5s	12	same
hammer dropped from waist height in vacuum lab	1:59:00	5s	12	same

setting car battery down in OSB shipping area	2:02:00	5s	12	same
continuous bouncing for 5s on exercise/seating ball	2:07:00	10s	6	same

Crowd walking randomly in control room

I also checked for any possible up conversions up to 500Hz.
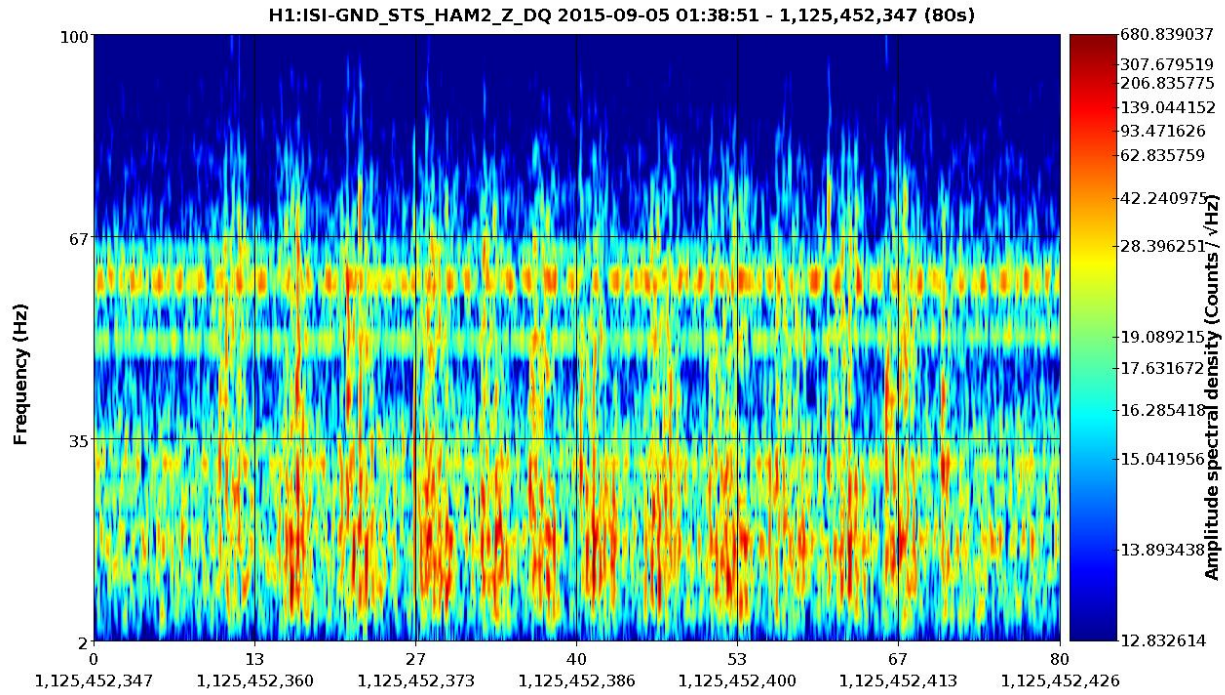
H1:ISI-GND_STS_HAM2_Z_DQ 2015-09-05 01:38:51 - 1,125,452,347 (80s)

Fs=512Hz, sec/fft = 0.50, overlap = 0.90, fft length=256, #-FFT = 1566/1, bw = 2, in samples = 41K, low = 0.20

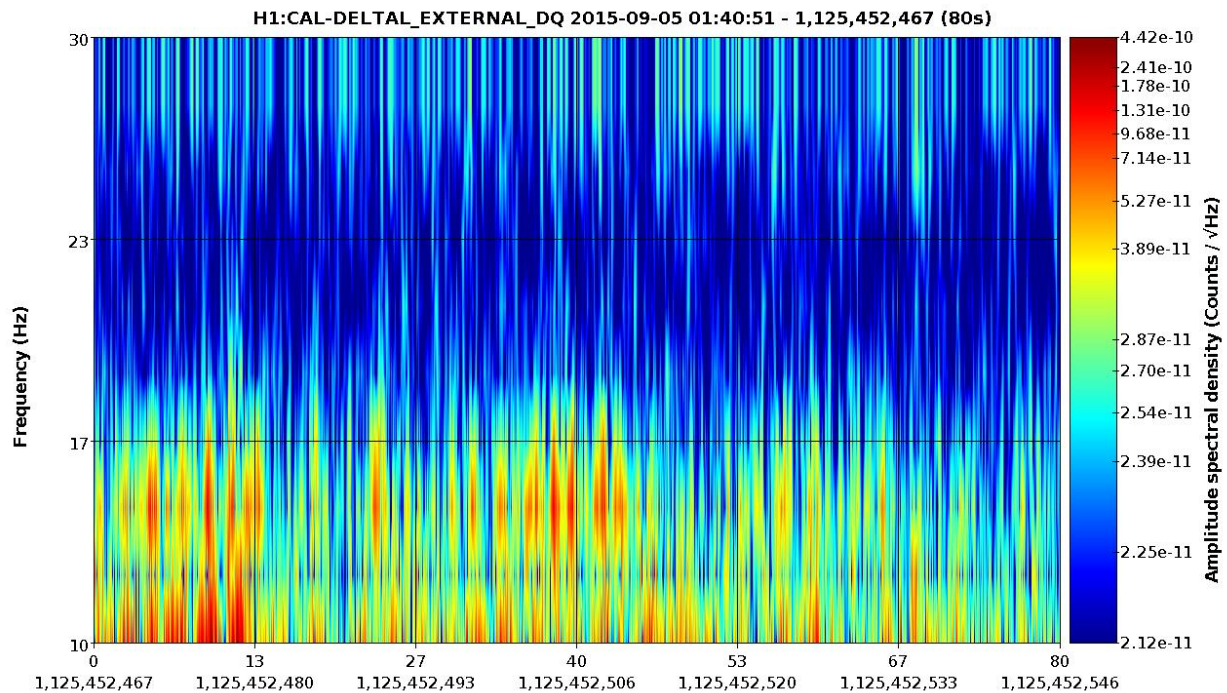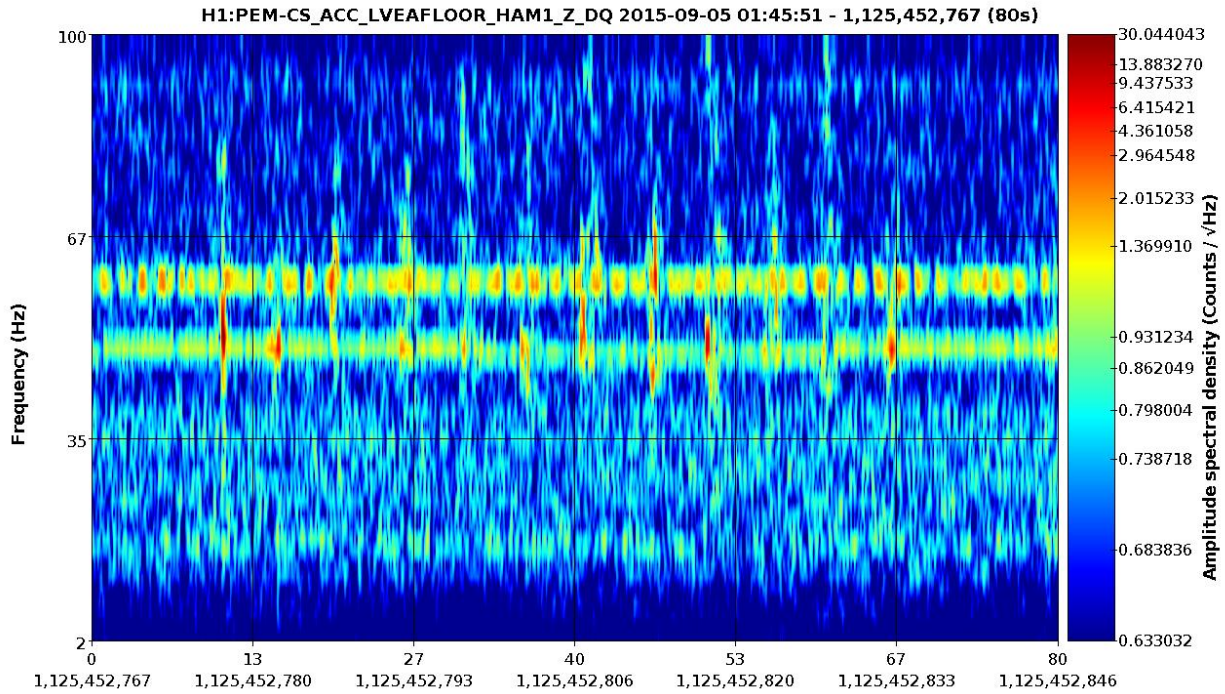**H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:38:51 - 1,125,452,347 (80s)**
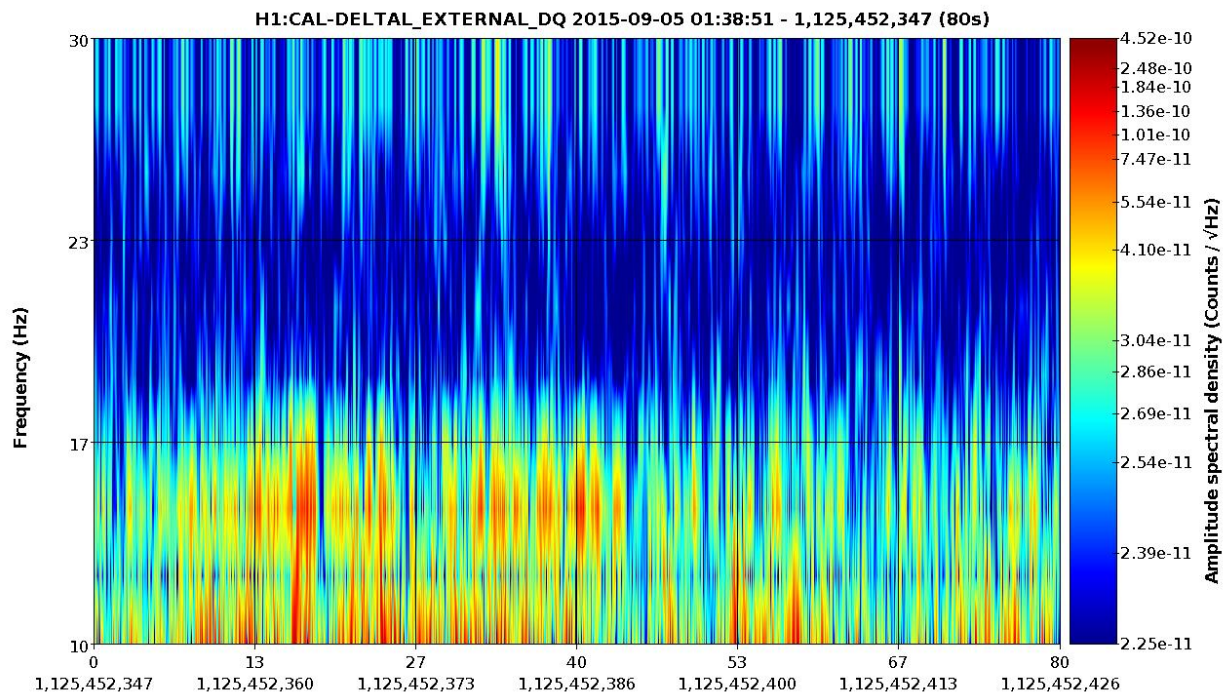
Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1589/1, bw = 2, in samples = 1,311K, low = 0.20

Crowd walking randomly in hall just outside control room
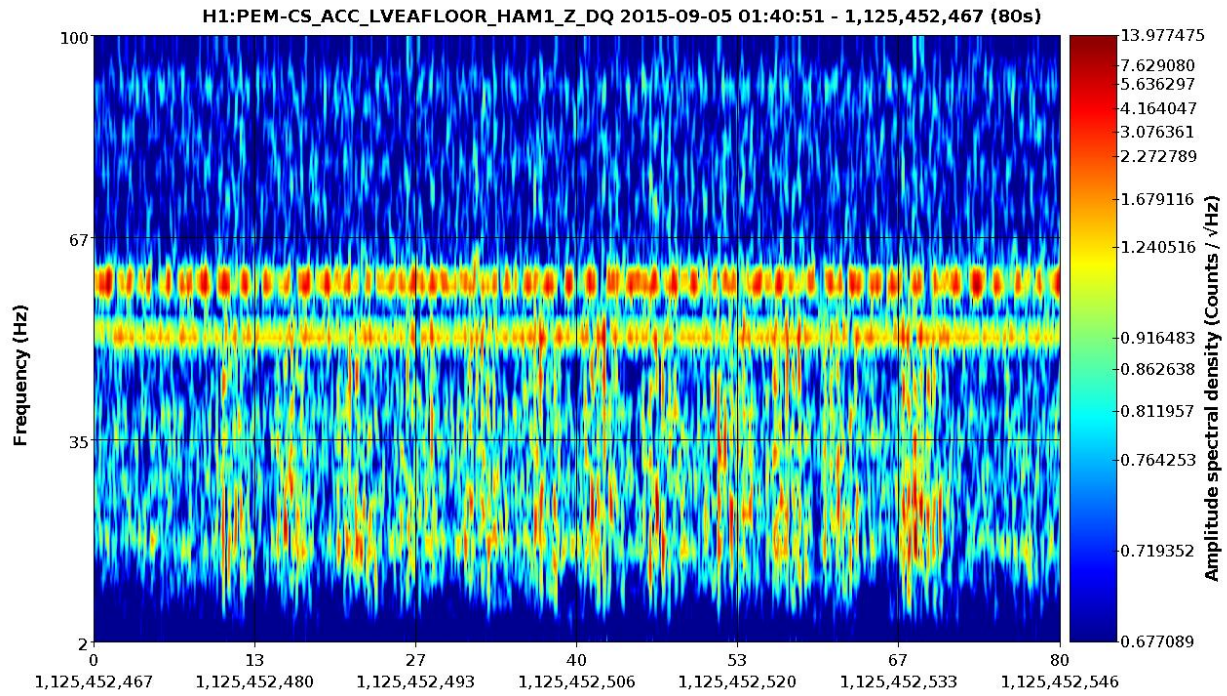
H1:PEM-CS_ACC_LVEAFLOOR_HAM1_Z_DQ 2015-09-05 01:40:51 - 1,125,452,467 (80s)

Fs=2,048Hz, sec/fft = 0.50, overlap = 0.90, fft length=1,024, #-FFT = 1581/1, bw = 2, in samples = 164K, low = 0.20

H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:40:51 - 1,125,452,467 (80s)

Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1589/1, bw = 2, in samples = 1,311K, low = 0.20

External door near control room shutting by itself

The injection doesn't show up in HAM2 ISI seismometer and HAM1 accelerometer
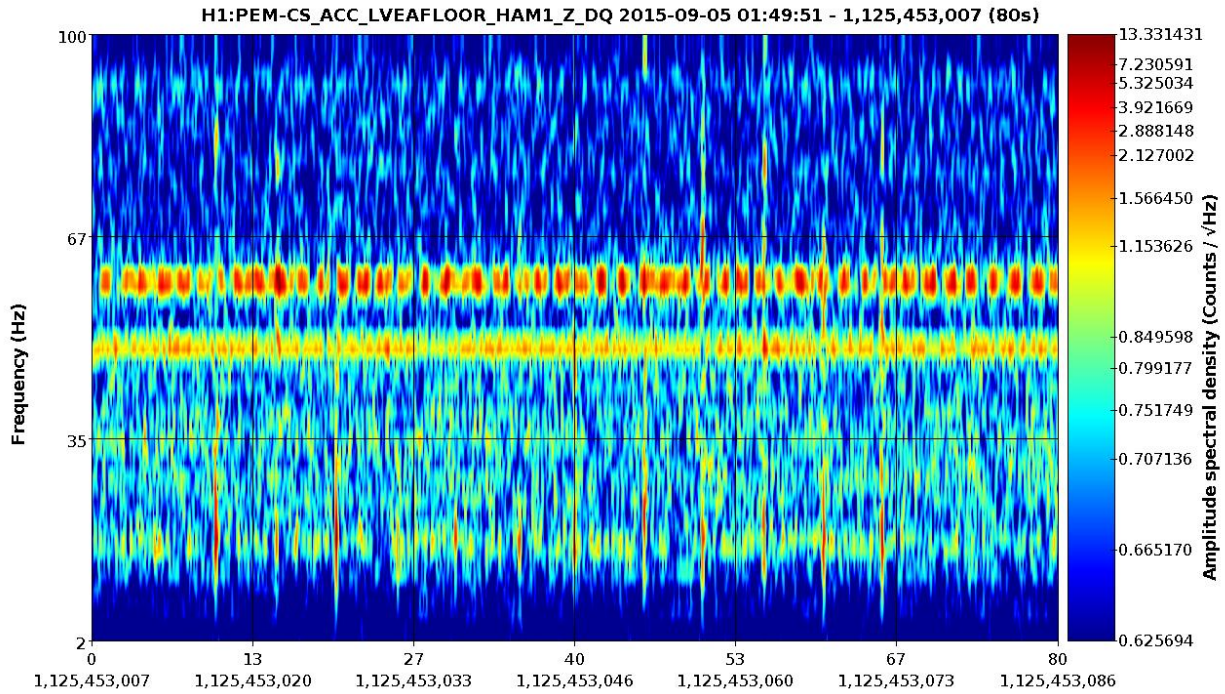
Chair rolling in control room

H1:PEM-CS_ACC_LVEAFLOOR_HAM1_Z_DQ 2015-09-05 01:45:51 - 1,125,452,767 (80s)

Fs=2,048Hz, sec/fft = 0.50, overlap = 0.90, fft length=1,024, #-FFT = 1581/1, bw = 2, in samples = 164K, low = 0.20

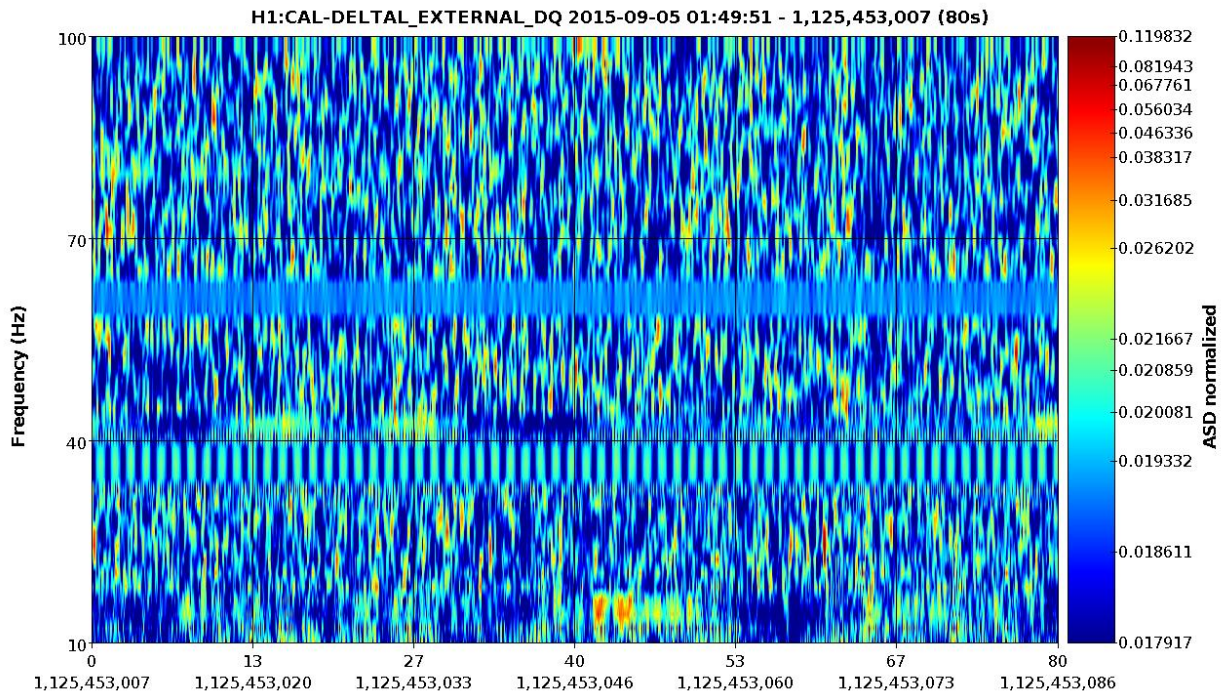**H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:45:51 - 1,125,452,767 (80s)**
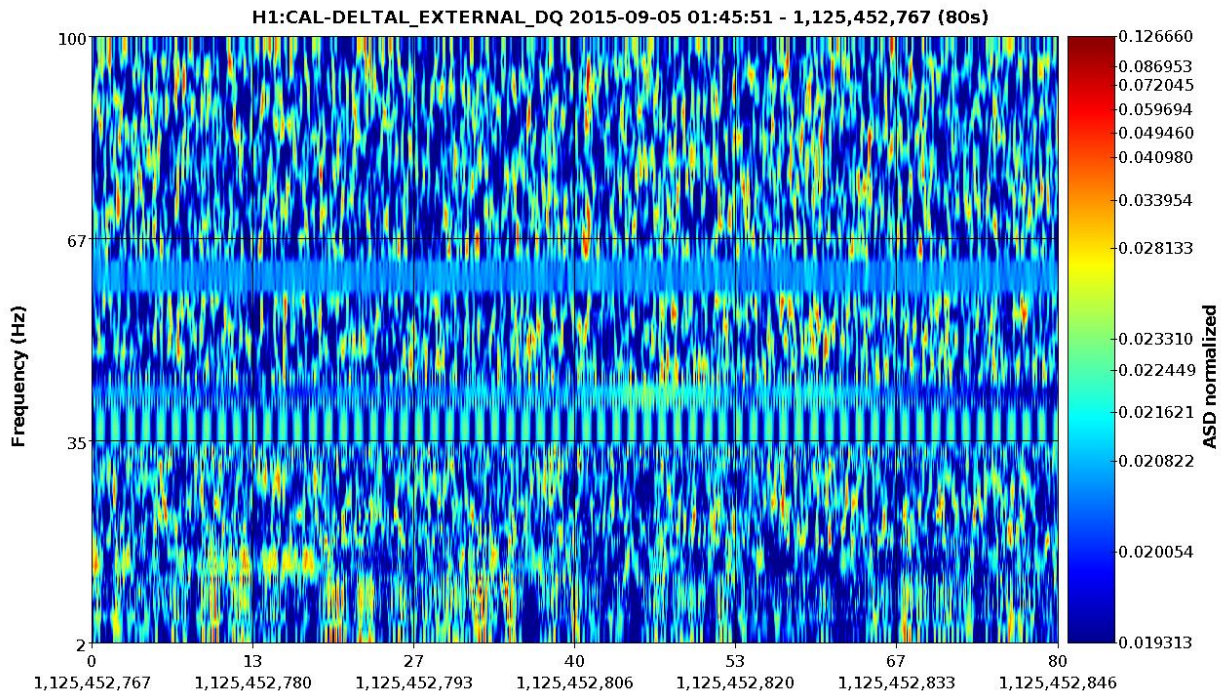
Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1589/1, bw = 2, in samples = 1,311K, low = 0.20

Single large steps in control room

H1:PEM-CS_ACC_LVEAFLOOR_HAM1_Z_DQ 2015-09-05 01:49:51 - 1,125,453,007 (80s)

Fs=2,048Hz, sec/fft = 0.50, overlap = 0.90, fft length=1,024, #-FFT = 1581/1, bw = 2, in samples = 164K, low = 0.20

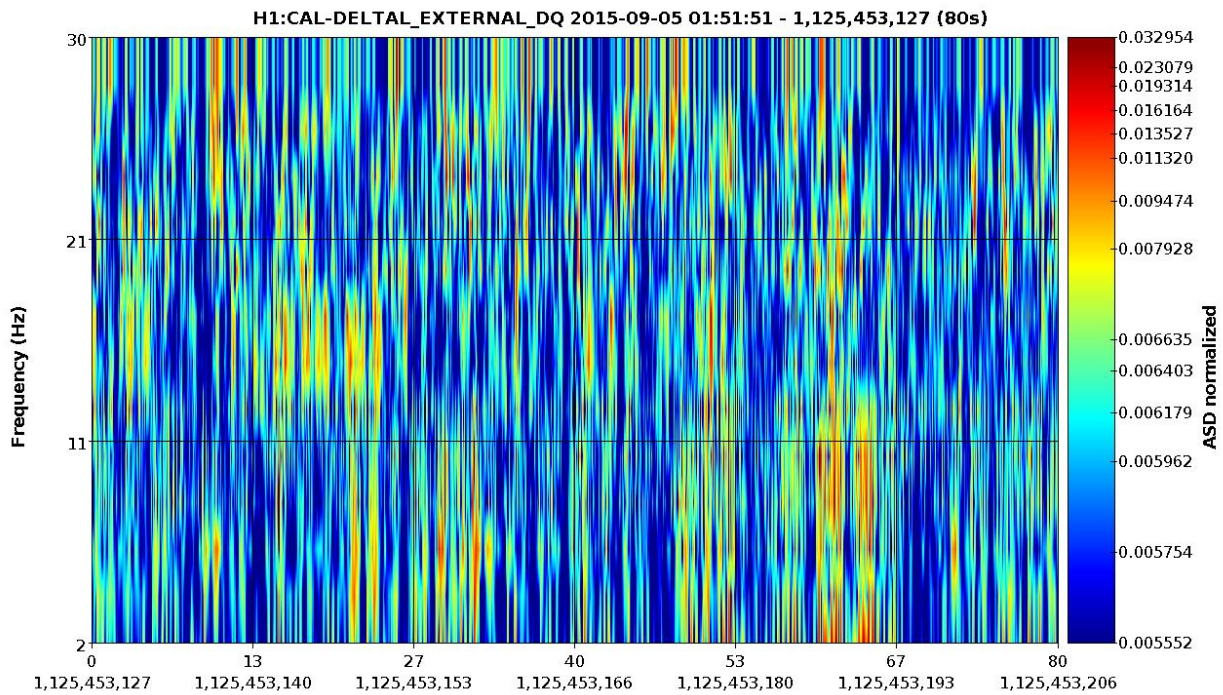### H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:49:51 - 1,125,453,007 (80s)

Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1589/1, bw = 2, in samples = 1,311K, low = 0.20

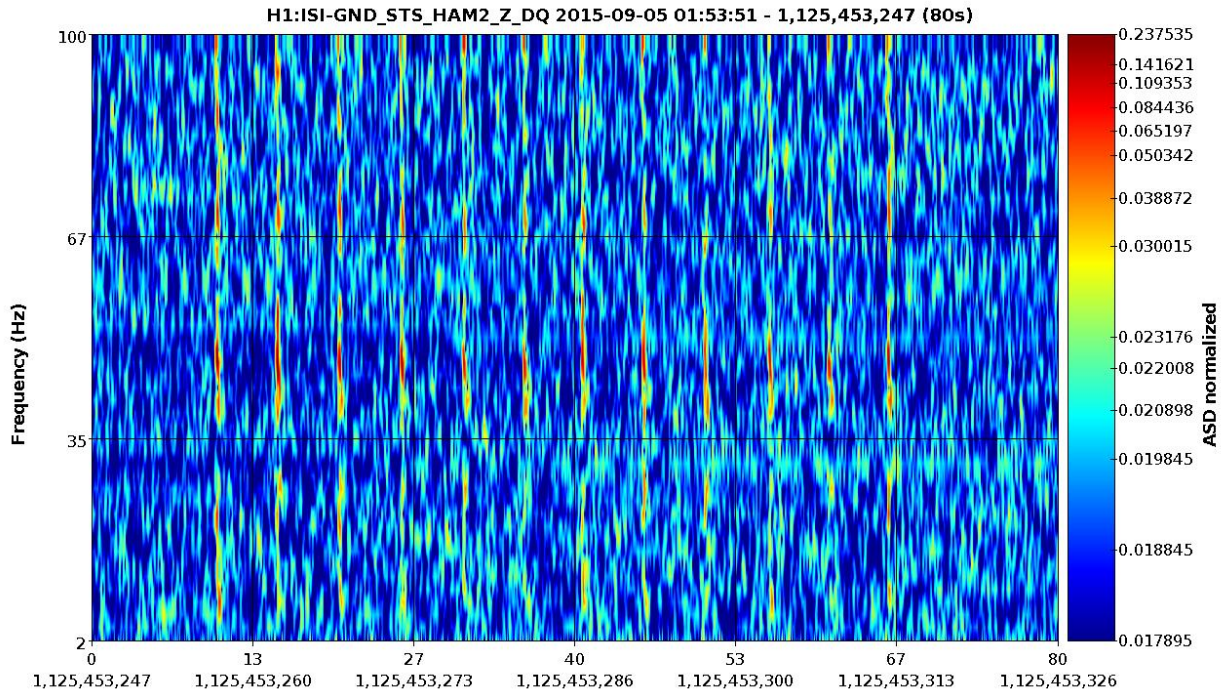# Airlock door (door to lab area near control room) shut by hand
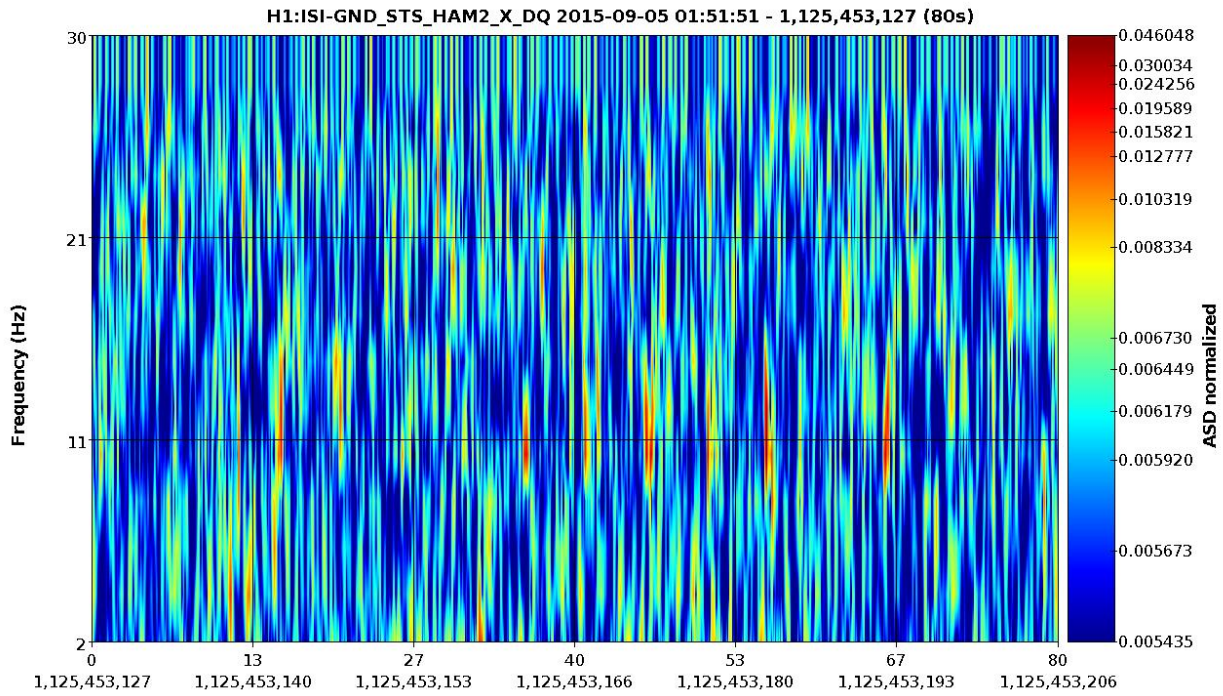
H1:ISI-GND_STS_HAM2_X_DQ 2015-09-05 01:51:51 - 1,125,453,127 (80s)

Fs=512Hz, sec/fft = 0.50, overlap = 0.90, fft length=256, #-FFT = 1566/1, bw = 2, in samples = 41K, low = 0.20

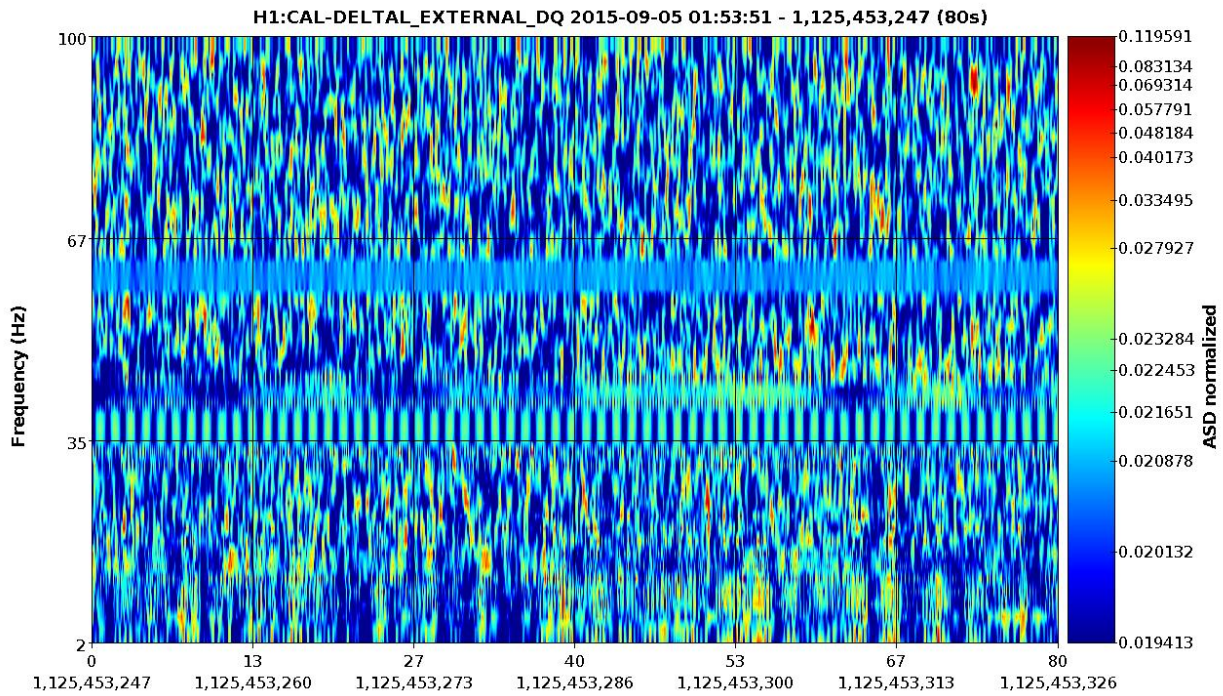**H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:51:51 - 1,125,453,127 (80s)**

Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1589/1, bw = 2, in samples = 1,311K, low = 0.20

Slamming office door

H1:ISI-GND_STS_HAM2_Z_DQ 2015-09-05 01:53:51 - 1,125,453,247 (80s)

Fs=512Hz, sec/fft = 0.50, overlap = 0.90, fft length=256, #-FFT = 1566/1, bw = 2, in samples = 41K, low = 0.20

### H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:53:51 - 1,125,453,247 (80s)

Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1589/1, bw = 2, in samples = 1,311K, low = 0.20

Hammer dropped from waist height in vacuum lab

I plotted 0-60s for this injection because there's a loud glitch right after that interferes with DARM spectrogram (0 being the time of the injection started).


H1:PEM-CS_ACC_LVEAFLOOR_HAM1_Z_DQ 2015-09-05 01:59:01 - 1,125,453,557 (60s)
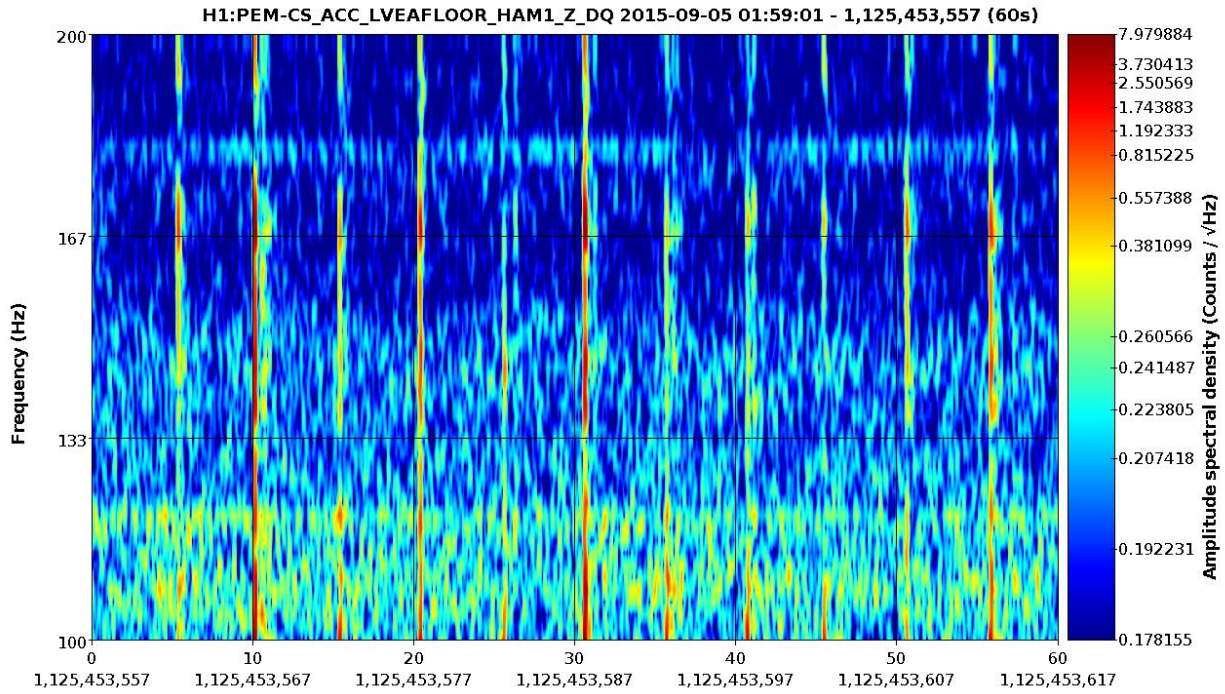
Fs=2,048Hz, sec/fft = 0.50, overlap = 0.90, fft length=1,024, #-FFT = 1184/1, bw = 2, in samples = 123K, low = 0.20

H1:CAL-DELTAL_EXTERNAL_DQ 2015-09-05 01:59:01 - 1,125,453,557 (60s)
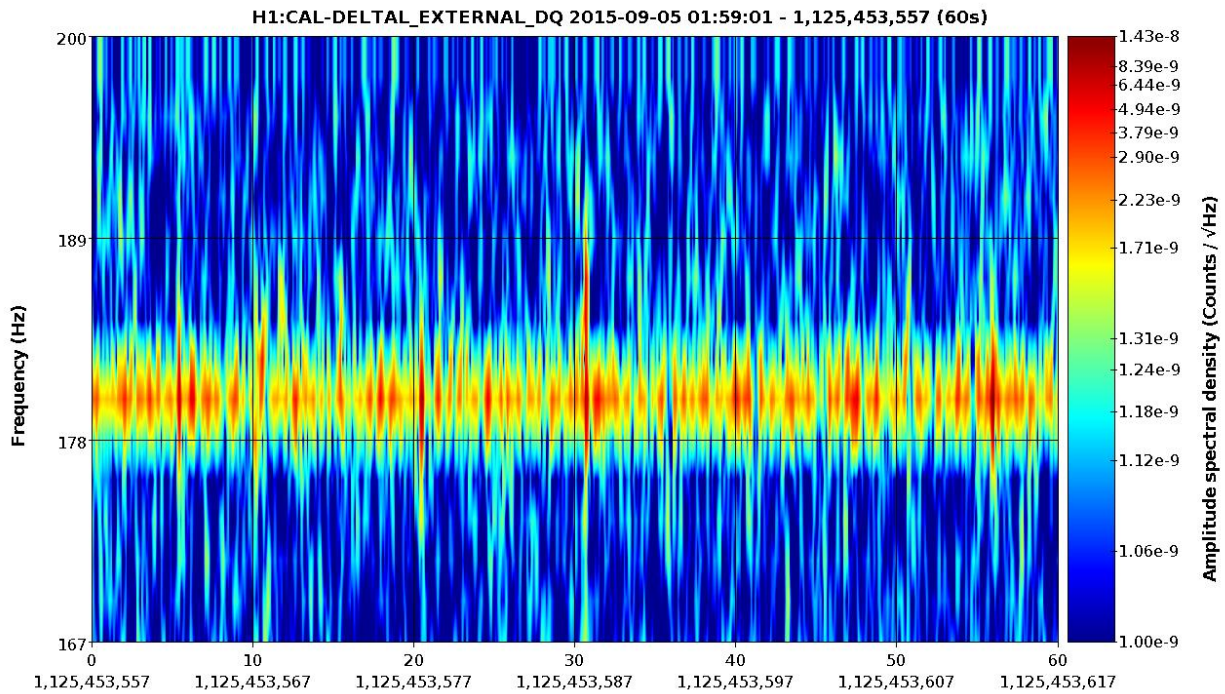
Fs=16,384Hz, sec/fft = 0.50, overlap = 0.90, fft length=8,192, #-FFT = 1189/1, bw = 2, in samples = 983K, low = 0.20
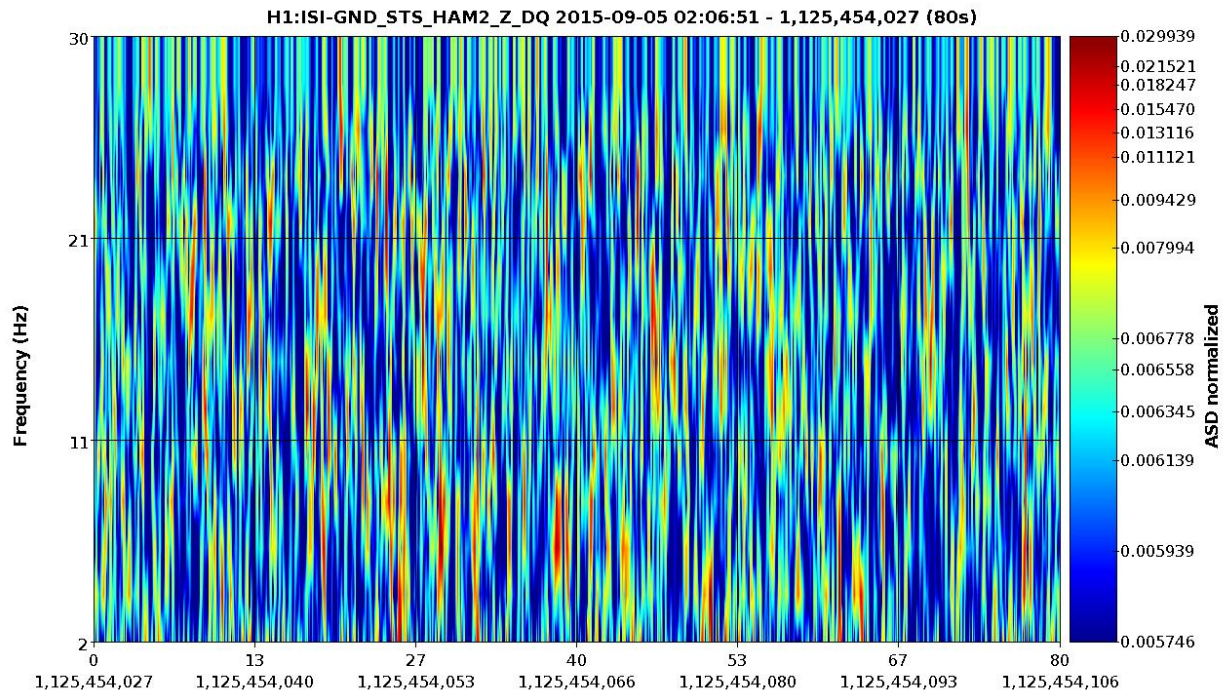
Setting car battery down in OSB shipping area

The injection coupled to DARM between 84-99Hz and 150-200Hz
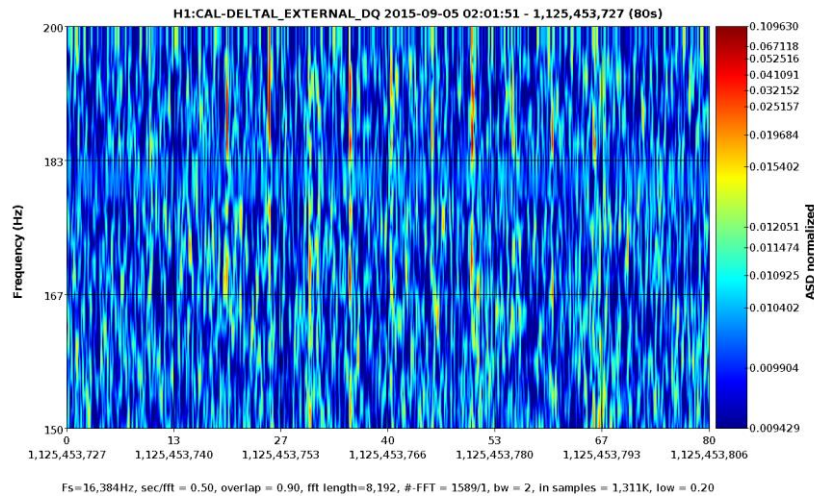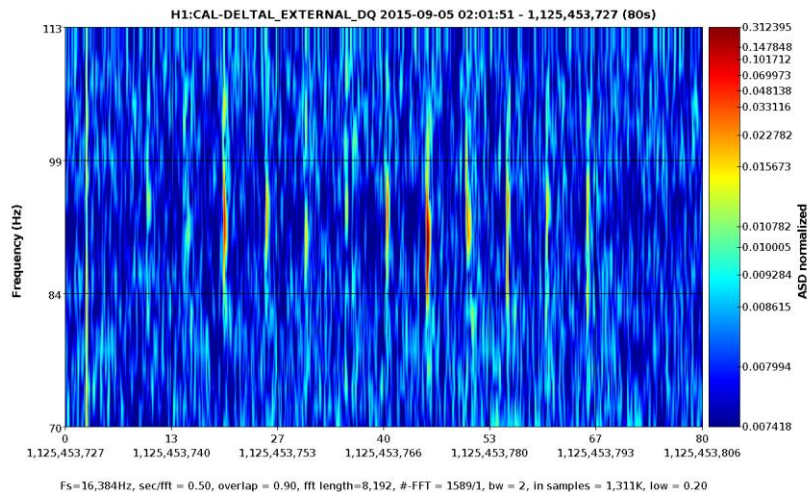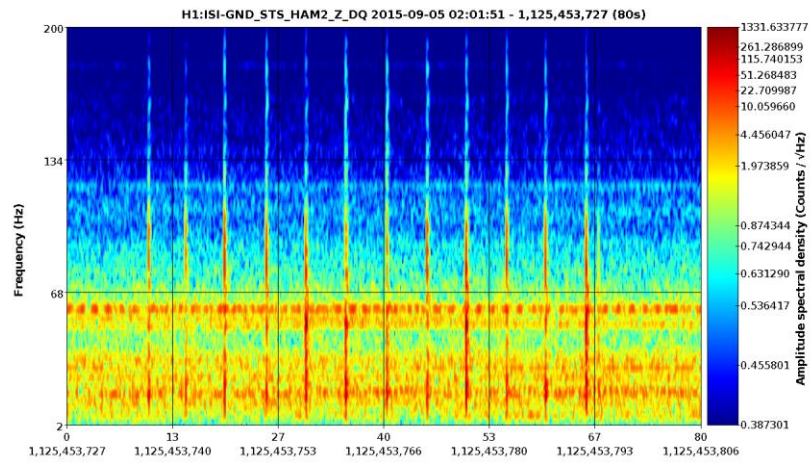
Continuous bouncing for 5s on exercise/seating ball

The previous single-bounce injection showed up on HAM2 ISI seismometer between 0-10 Hz.
This injection doesn't seem to show up anywhere this time.

H1:ISI-GND_STS_HAM2_Z_DQ 2015-09-05 02:06:51 - 1,125,454,027 (80s)

Fs=512Hz, sec/fft = 0.50, overlap = 0.90, fft length=256, #-FFT = 1566/1, bw = 2, in samples = 41K, low = 0.20