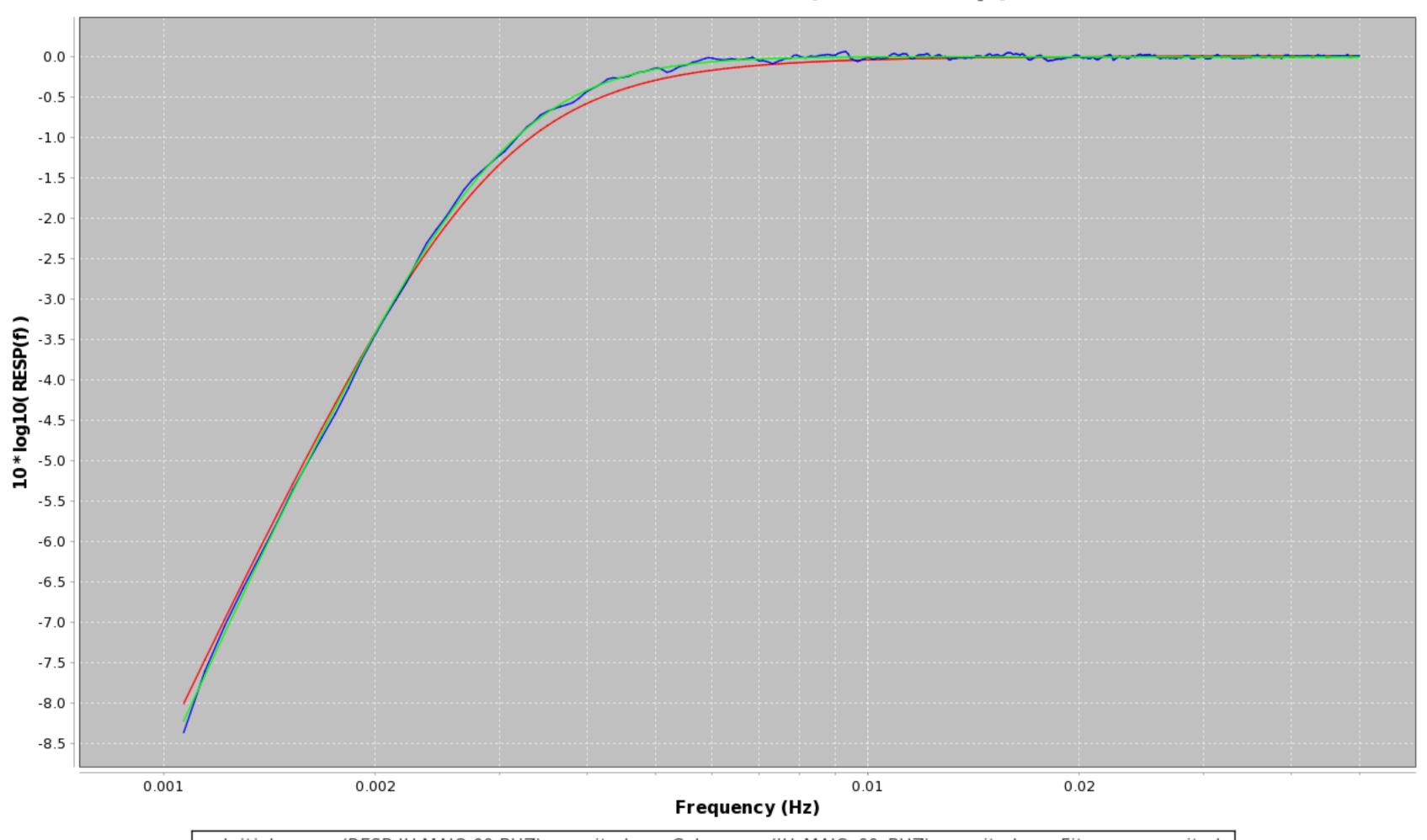
## Randomized calibration (LOW FREQ.)



Initial param (RESP.IU.MAJO.00.BHZ) magnitude — Calc. resp. (IU\_MAJO\_00\_BHZ) magnitude Fit resp. magnitude Initial poles: Residuals: Initial zeros: -0.00773 (812.52954 s) Initial (nom. resp curve): 2767.3700765426265 -0.01357 (462.98958 s)

-0.01265 + 0.01234i; -0.01265 - 0.01234i (355.59736 s) -0.01357 (462.98958 s); -0.01902 (330.35318 s) Fit zeros: Fit poles: -0.01949 (322.43409 s) -0.01173 (535.62645 s) -0.01949 (322.43409 s); -0.013 - 0.01373i; -0.013 + 0.01373i (332.40549 s)

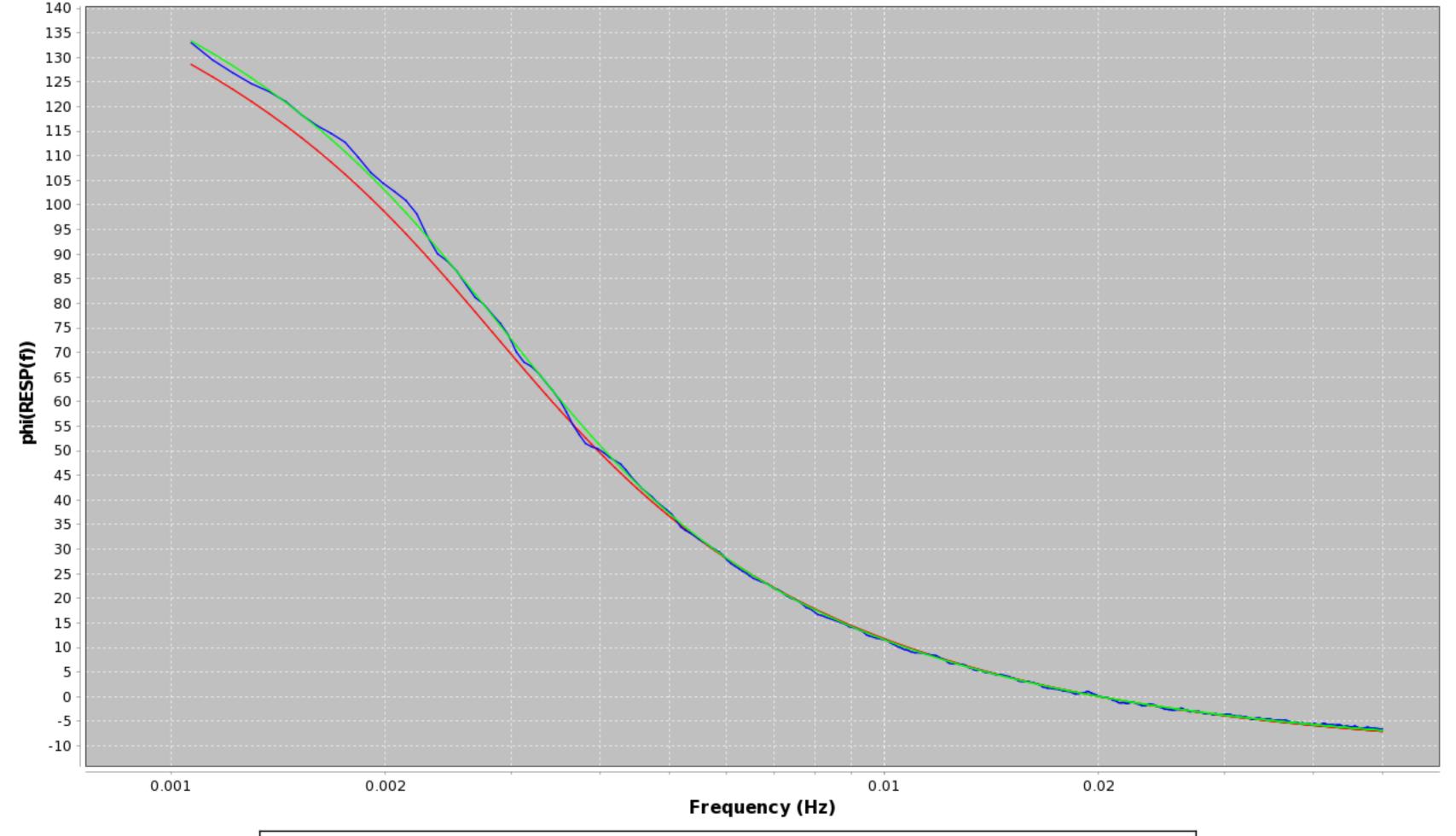
-0.0254 (247.40703 s)

**NUMBER OF ITERATIONS: 23** 

Best fit: 1083.5472836511426

Best fit: 1083.5472836511426

## Randomized calibration (LOW FREQ.)



Initial param (RESP.IU.MAJO.00.BHZ) phase — Calc. resp. (IU\_MAJO\_00\_BHZ) phase — Fit resp. phase Initial zeros: Residuals:

Initial poles: -0.00773 (812.52954 s) -0.01357 (462.98958 s) Initial (nom. resp curve): 2767.3700765426265 -0.01265 + 0.01234i; -0.01265 - 0.01234i (355.59736 s) -0.01357 (462.98958 s); -0.01902 (330.35318 s) Fit zeros:

-0.01949 (322.43409 s) Fit poles: -0.01173 (535.62645 s) -0.01949 (322.43409 s); -0.013 - 0.01373i; -0.013 + 0.01373i (332.40549 s)

-0.0254 (247.40703 s)

**NUMBER OF ITERATIONS: 23** 

## **Randomized calibration** 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 Amplitude error (percentage) 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.5 -4.0 -4.5 0.001 0.002 0.01 0.02 Frequency (Hz) Percent error of init. amplitude — Percent error of fit amplitude **Randomized calibration** 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.0 -3.5 -4.0 -4.5 -5.0 -5.5 -6.0 -6.5 -7.0 0.001 0.002 0.01 0.02 Frequency (Hz) Diff. with init phase — Diff with fit phase

```
Initial poles:
-0.00773 (812.52954 s)
-0.01265 + 0.01234i; -0.01265 - 0.01234i (355.59736 s)
-0.01902 (330.35318 s)
Fit poles:
-0.01173 (535.62645 s)
-0.013 - 0.01373i; -0.013 + 0.01373i (332.40549 s)
-0.0254 (247.40703 s)
Initial zeros:
-0.01357 (462.98958 s)
-0.01357 (462.98958 s);
Fit zeros:
-0.01949 (322.43409 s)
-0.01949 (322.43409 s);
Residuals:
Initial (nom. resp curve): 2767.3700765426265
Best fit: 1083.5472836511426
Iteration count from solver: 23
Input filenames, with SEED and RESP files paired as appropriate:
IU_MAJO_ _BC0
IU MAJO 00 BHZ
RESP.IU.MAJO.00.BHZ
Residuals weighting:
    Amplitude: 15058.198051425337
    Phase: 0.4308749882176093
Time of report generation:
2017.250.15:25:38
Data start time:
2017.213.23:34:28
Data end time:
2017.214.07:38:03
```

## POLE VARIABLES, AS CSV:

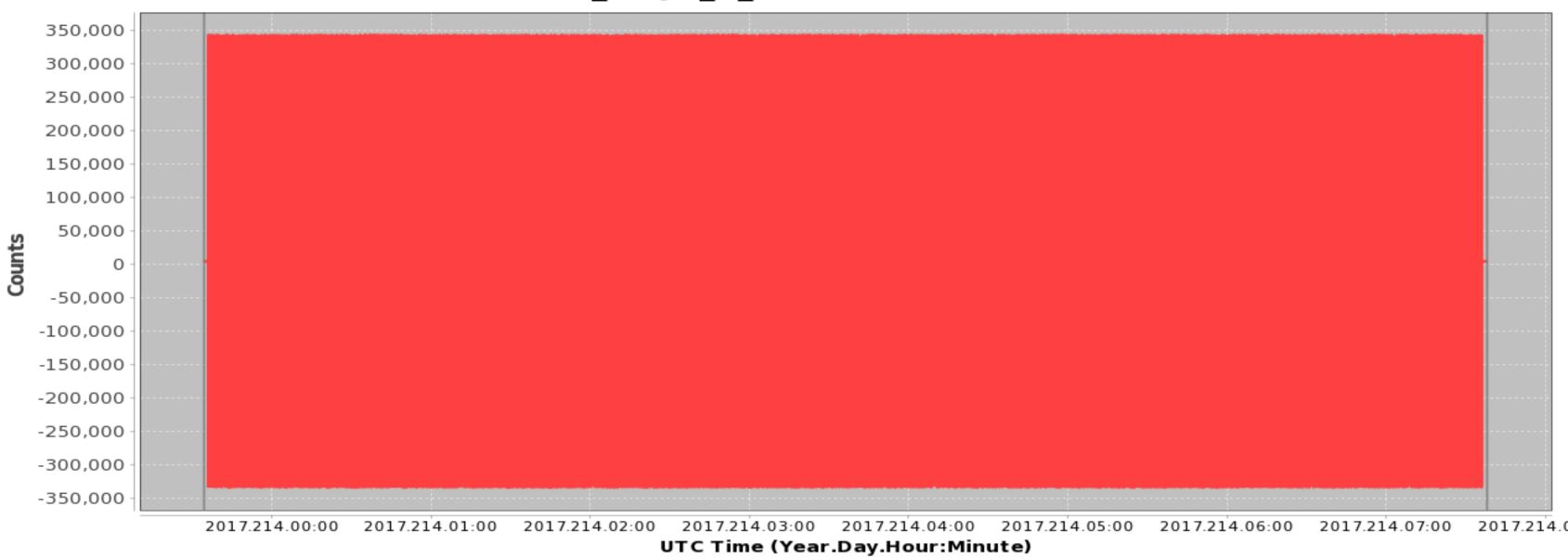
Init	Fit	Diff	Mean	PctDiff
-0.0077	-0.0117	+0.004	-0.0097	-34.0791
+0	+0	+0	+0	+0
-0.0126	-0.013	+0.0003	-0.0128	-2.687
+0.0123	+0.0137	-0.0014	+0.013	-10.0985
-0.019	-0.0254	+0.0064	-0.0222	-25.1083
+0	+0	+0	+0	+0
ZERO VARIABLES, AS CSV:				
Init	Fit	Diff	Mean	PctDiff
-0.0136	-0.0195	+0.0059	-0.0165	-30.3582

+0 +0 +0 +0 +0

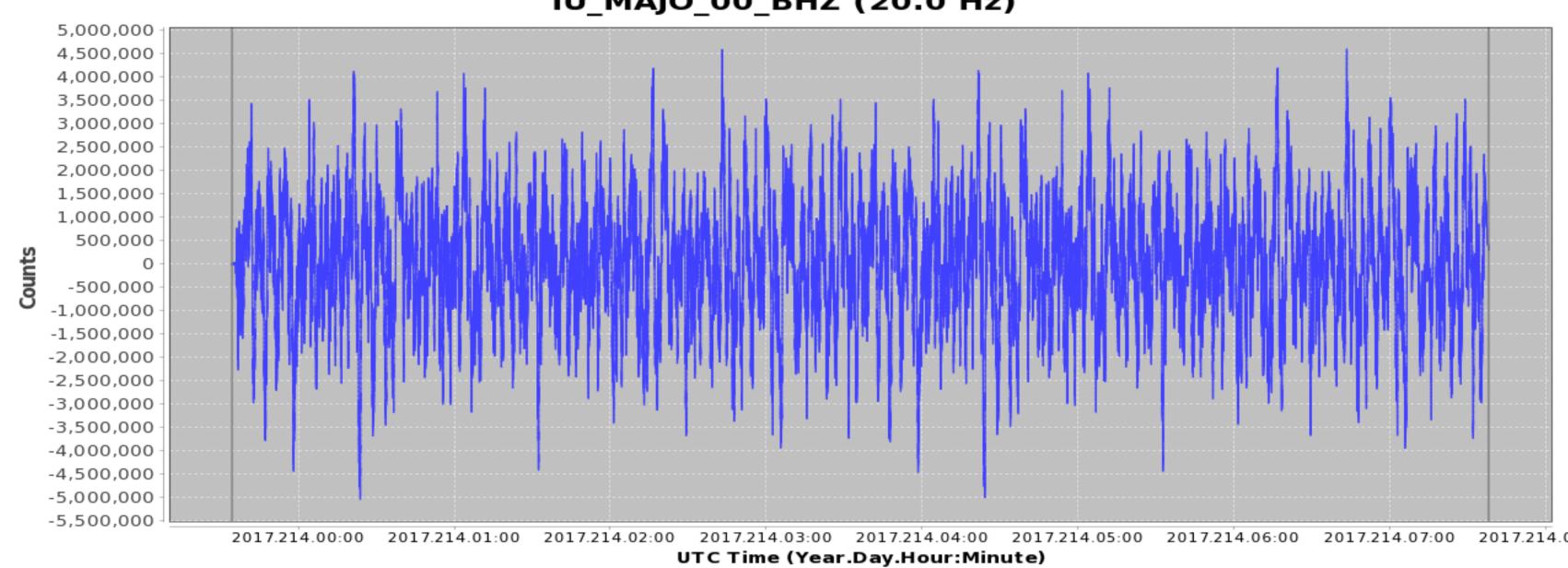
+0 +0 +0 +0 +0

-0.0136 -0.0195 +0.0059 -0.0165 -30.3582

IU\_MAJO\_ \_BC0 (20.0 Hz)



IU\_MAJO\_00\_BHZ (20.0 Hz)



```
Response name: RESP.IU.MAJO.00.BHZ
Gain stage values:
0: 6,007,140,000
1: 3,580.54
2: 1,677,720
3: 1
4: 1
5: 1
6: 1
Normalization: 3949.21
Normalization frequency (Hz): 0.05
Transfer function is LAPLACIAN
Response input units: velocity (m/s)
Response zeros:
0:0
1: 0
2: -0.0136
3: -0.0136
Response poles:
0: -0.0077
1: -0.0126 + 0.0123i
2: -0.0126 - 0.0123i
3: -0.019
```

4: -39.18 + 49.12i 5: -39.18 - 49.12i