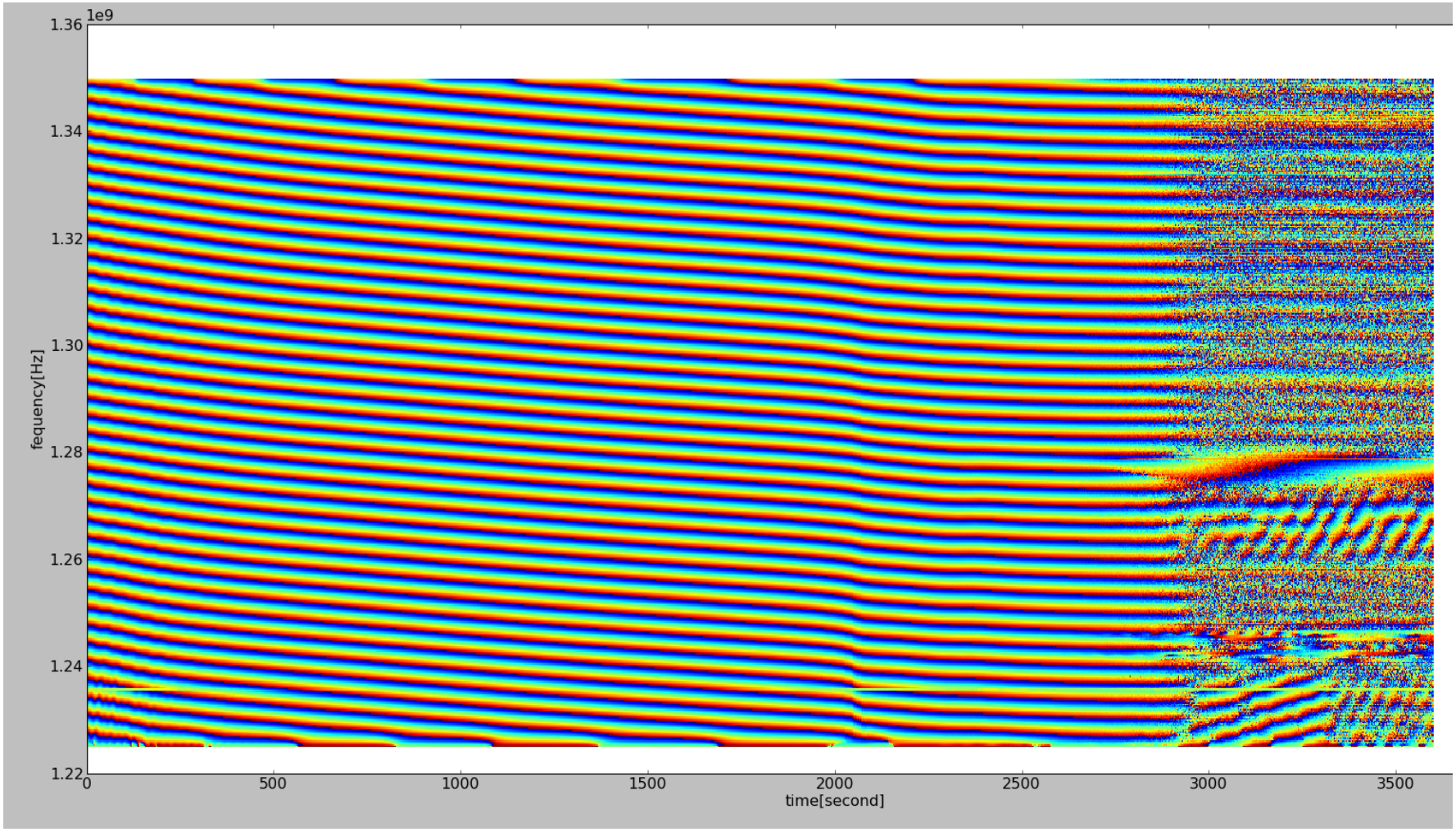
Preliminary result of Baiqi experiment

puzzles and unsolved problems



2D-Global fitting Vs twice 1D fitting

$$Visibility = A * Exp[i \frac{2\pi \vec{B}\vec{n}(t)\nu}{c} + \phi_1 \nu + \phi_0]$$

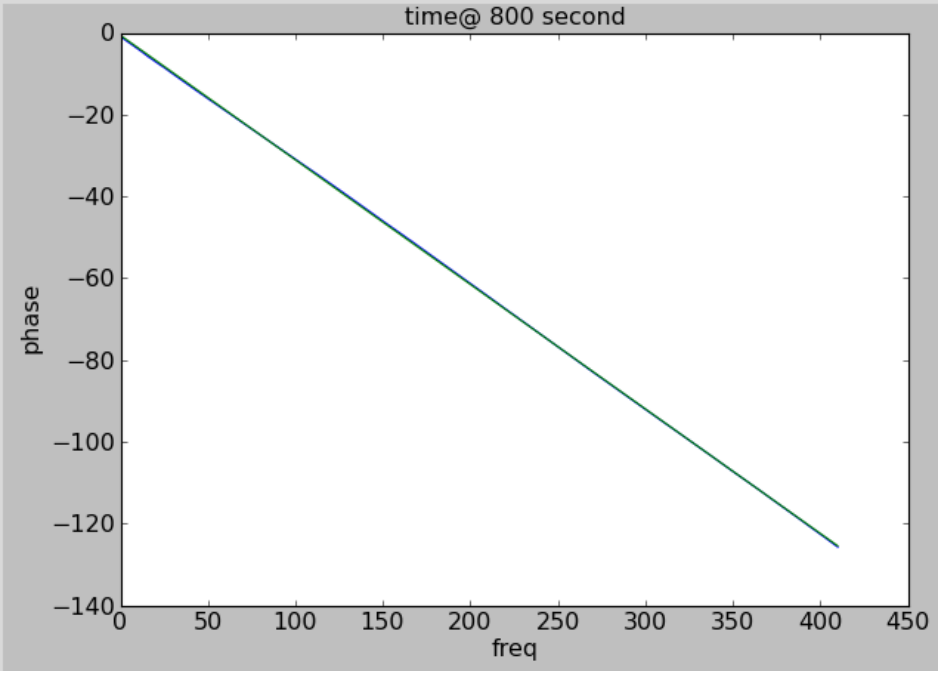
Twice 1D fitting

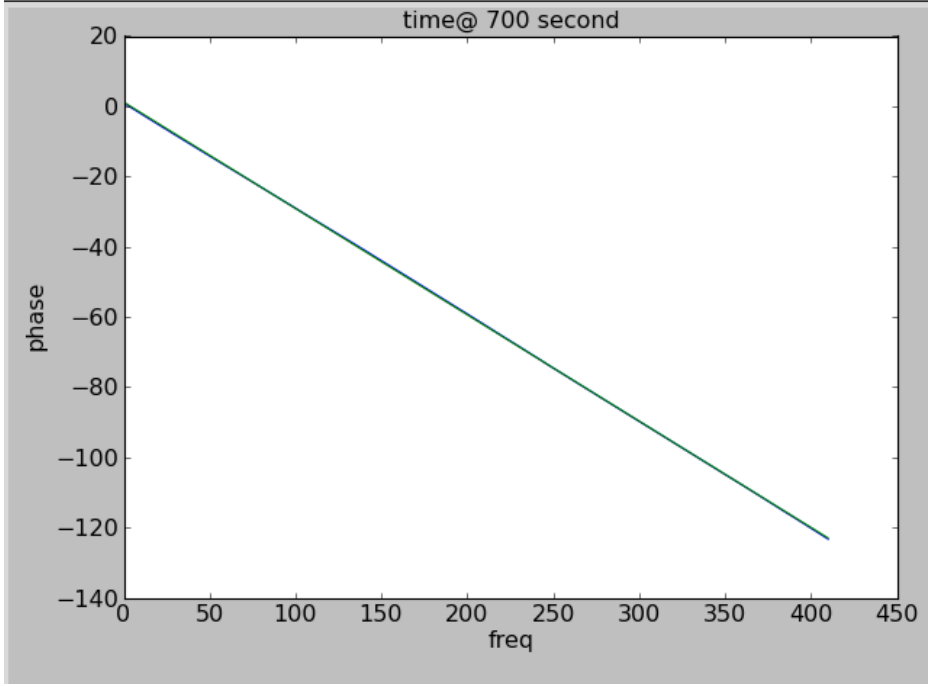
(1) Polynomial fitting($\varphi_0 + \varphi_1 \nu + \varphi_2 \nu^2 + \cdots$)

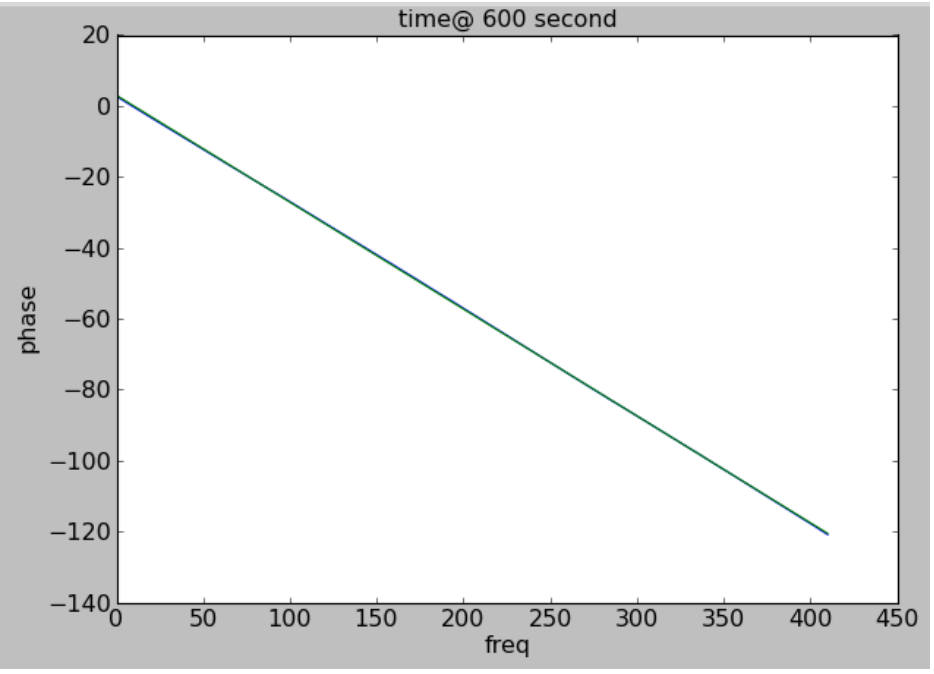
at each time point, we could get the temporal evolution of $\varphi_0(t)$ $\varphi_1(t)$

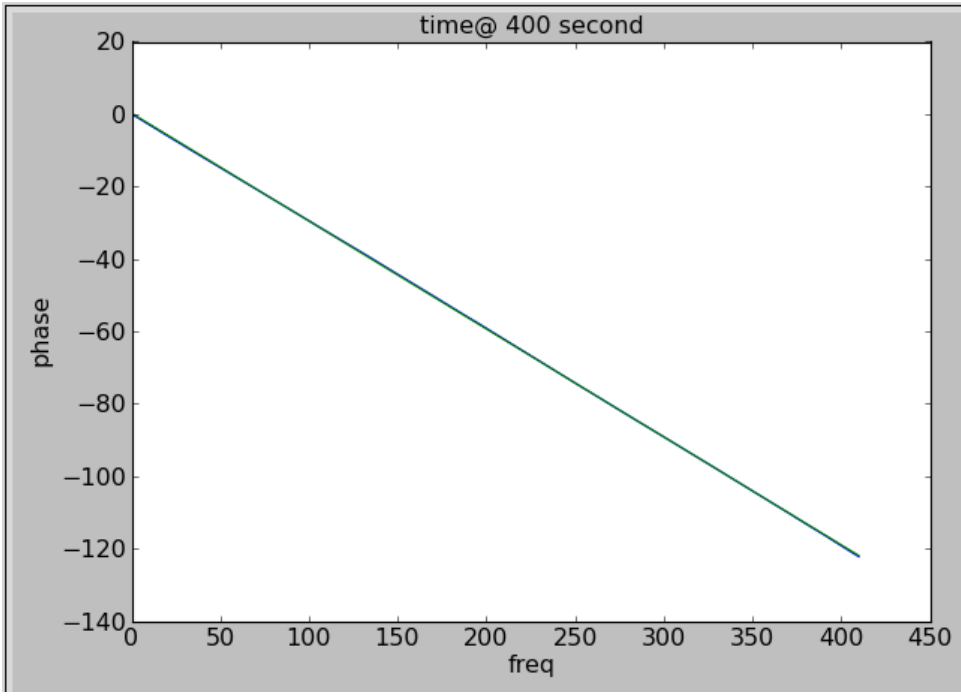
(2) Fit $\varphi_1(t)$

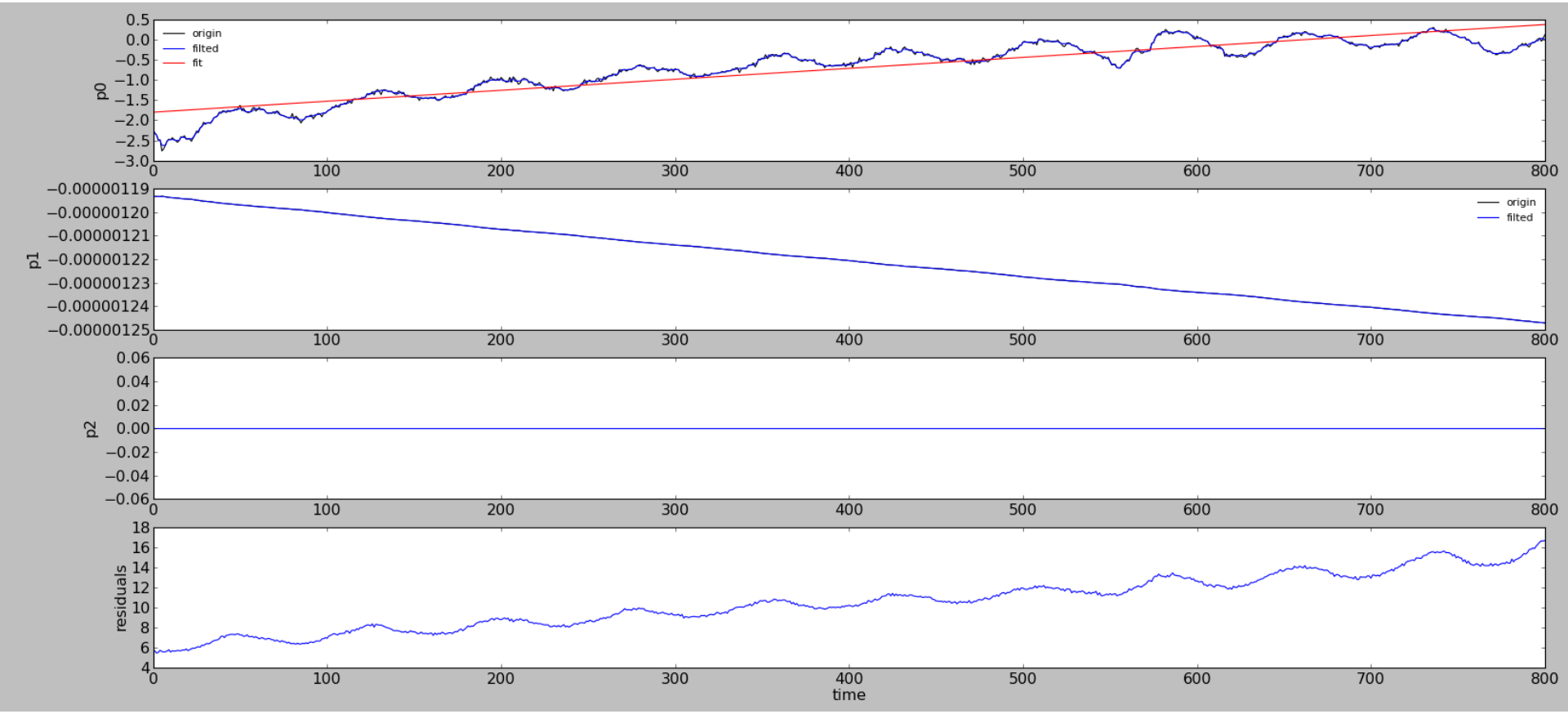
Fitting parameters: |B|, direction of base line(phi, theta), time offset of system, phi_1, phi_0

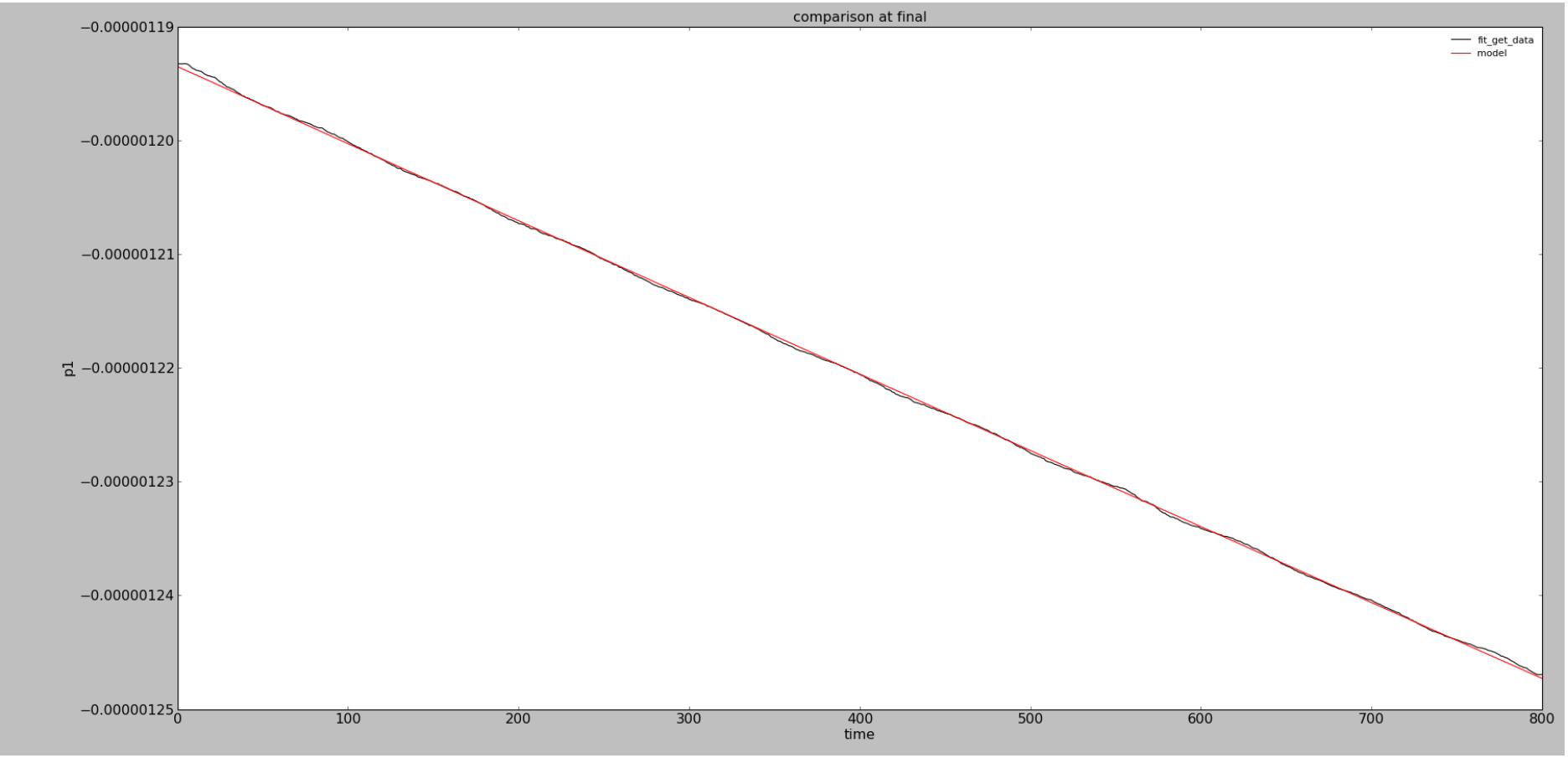

time@ 800 second
phase
freq
0
−20
−40
−60
−80
−100
−120
−140
0
50
100
150
200
250
300
350
400
450

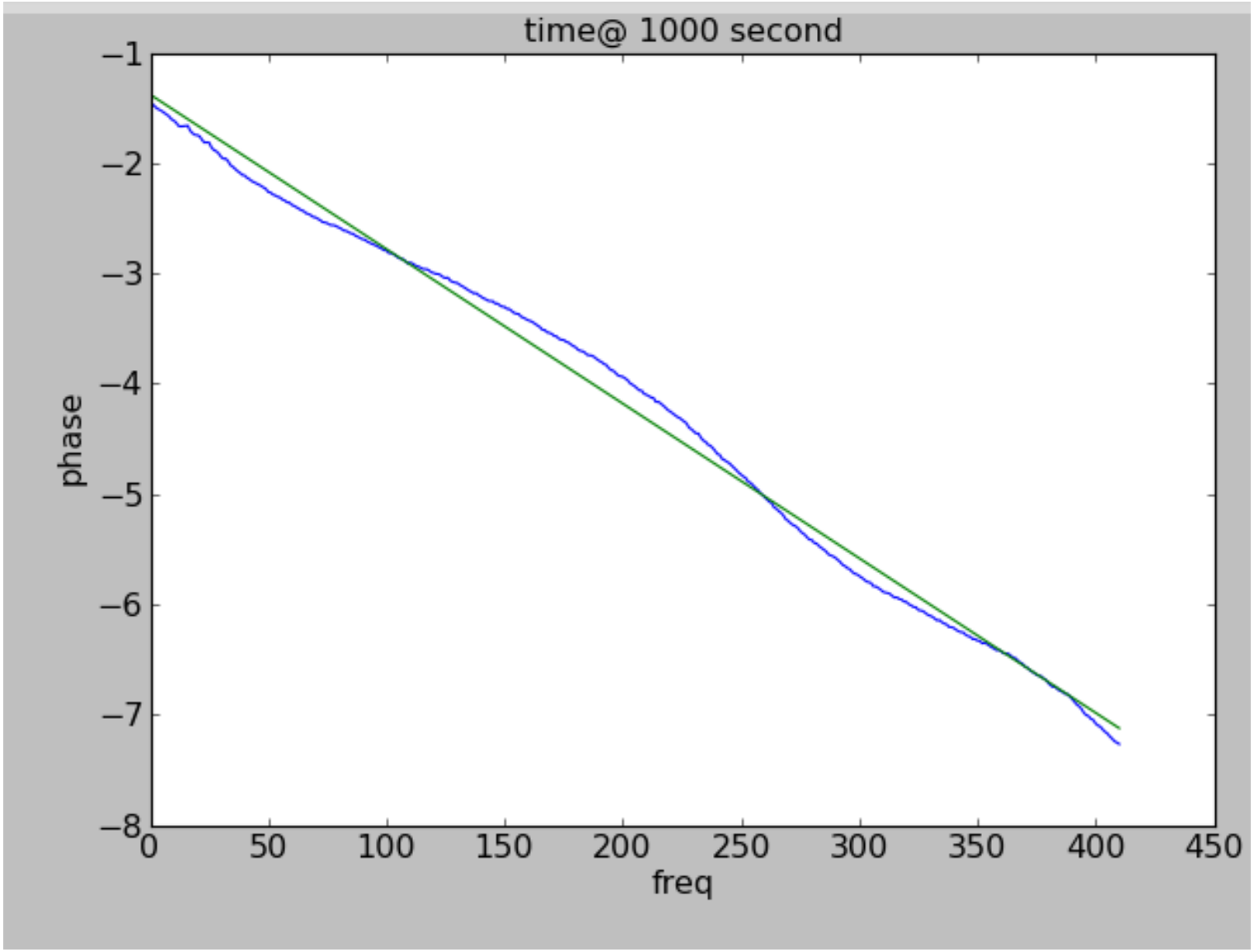

time@ 700 second
phase
freq
20
0
−20
−40
−60
−80
−100
−120
−140
0
50
100
150
200
250
300
350
400
450


time@ 600 second
phase
freq
20
0
−20
−40
−60
−80
−100
−120
−140
0
50
100
150
200
250
300
350
400
450


time@ 400 second
phase
freq
20
0
−20
−40
−60
−80
−100
−120
−140
0
50
100
150
200
250
300
350
400
450


origin
filted
fit
p0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−3.0
0
100
200
300
400
500
600
700
800
p1
−0.00000119
−0.00000120
−0.00000121
−0.00000122
−0.00000123
−0.00000124
−0.00000125
origin
filted
p2
0.06
0.04
0.02
0.00
−0.02
−0.04
−0.06
residuals
18
16
14
12
10
8
6
4
time


comparison at final
fit_get_data
model
p1
−0.00000119
−0.00000120
−0.00000121
−0.00000122
−0.00000123
−0.00000124
−0.00000125
0
100
200
300
400
500
600
700
800
time


time@ 1000 second
phase
freq
−1
−2
−3
−4
−5
−6
−7
−8
0
50
100
150
200
250
300
350
400
450