

Skew Quadrupole Modulation Experiment

(Jan. 13- 14 session)

The goal of this session

- 1) To measure the RHIC coupling at injection and on ramp
- 2) To further check the theory for skewQ modulation, if time permits

The Data taken from Ex.

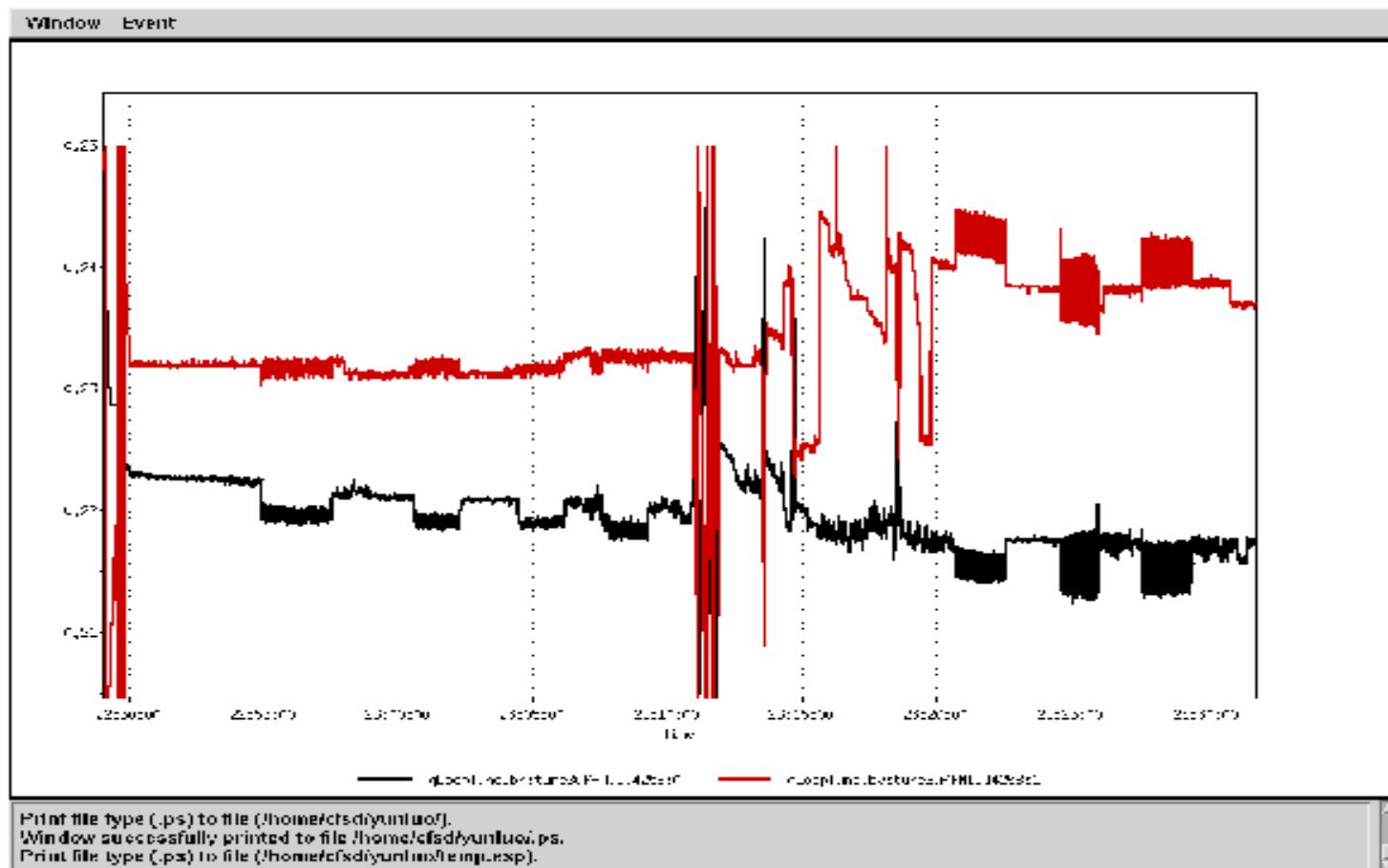
- 1) Normal injection condition
- 2) With more coupling source: SQ F2: 0.0004
- 3) With more coupling source: SQ F3: -0.0004
- 4) Normal injection condition, failed to ramp up, no data from ramp.

Every condition, taking data with three modulating skewQ families

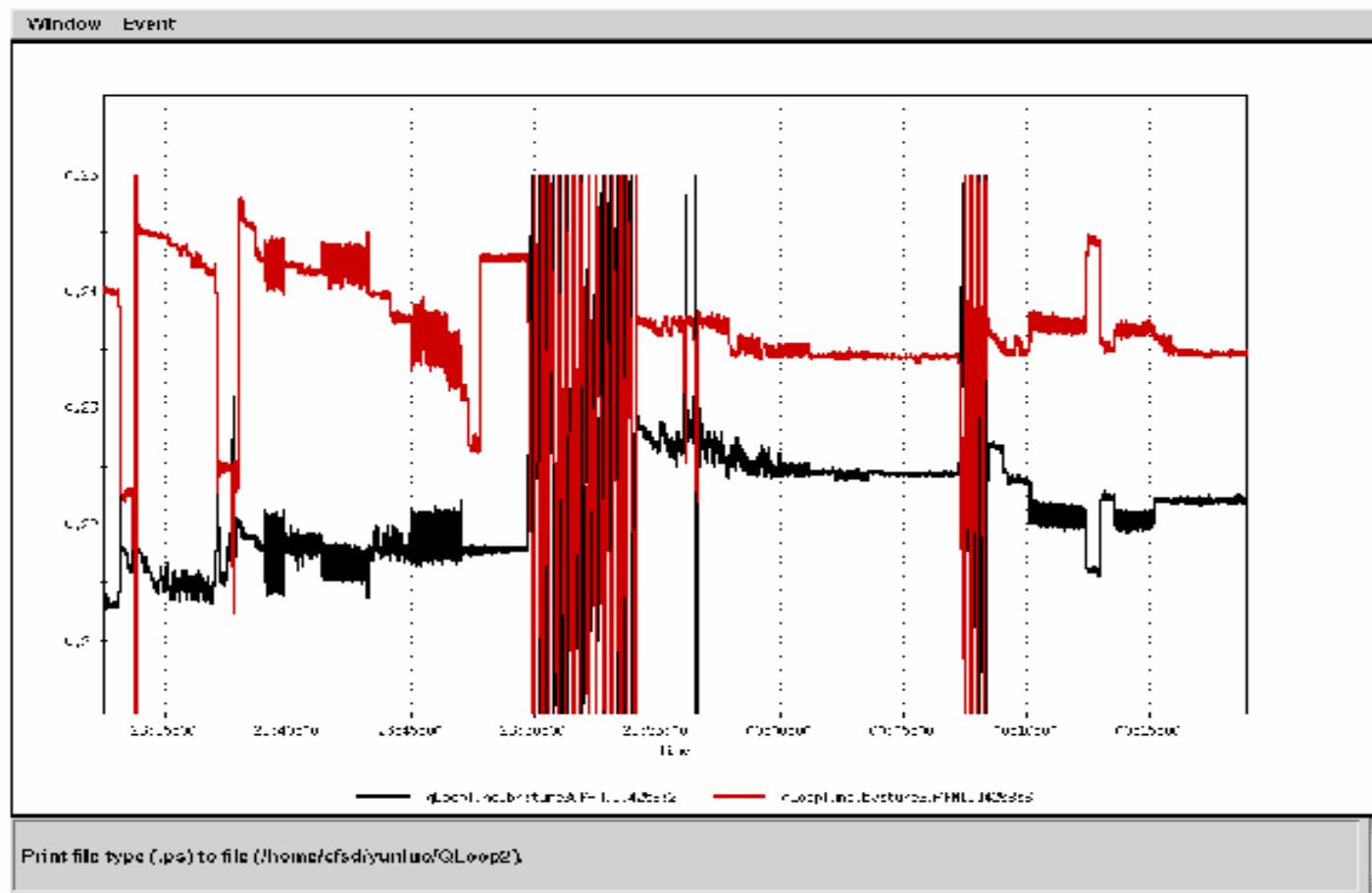
Data taken List and Processing

Ex. Condition	Data List	Peak_1.0Hz	Peak_2.0Hz	Projection Ratio	Sign of Projection (need check)
Normal Injection DQmin=0.005	2301	4.46e-07	1.67e-06	0.067	
	2305	4.94e-07	1.16e-06	0.106	
	2307	9.26e-07	4.80e-06	0.048	
SkewQ F2: +0.0004 DQmin=0.018	2321	5.77e-05	2.32e-05	0.621	+ (bi1.ps)
	2324	1.01e-04	1.03e-05	2.436	-(b03.ps)
	2327	8.70e-05	1.40e-05	1.549	-(bi5.ps)
SkewQ F3: -0.0004 DQmin=0.025	2339	1.15e-04	1.41e-05	2.037	+(bi1.ps)
	2341	6.06e-05	1.65e-05	0.918	-(b03.ps)
	2345	6.63e-05	2.40e-06	6.903	-(bi5.ps)
Normal Injection DQmin=0.006	2358	1.48e-06	1.73e-06	0.2143	
	0000	3.30e-07	1.91e-06	0.0432	
	0002	4.74e-07	4.90e-07	0.2419	

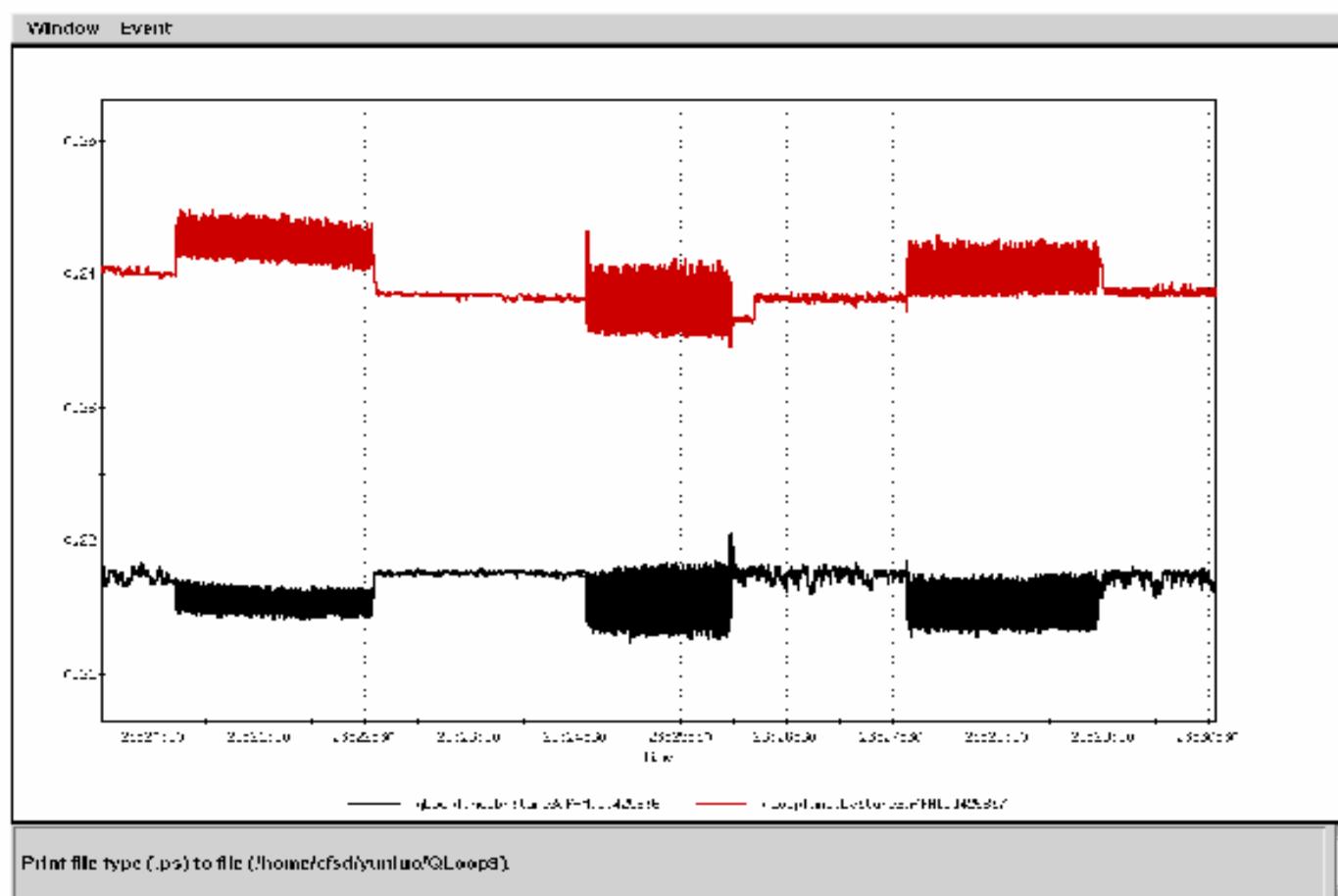
PLL data 1



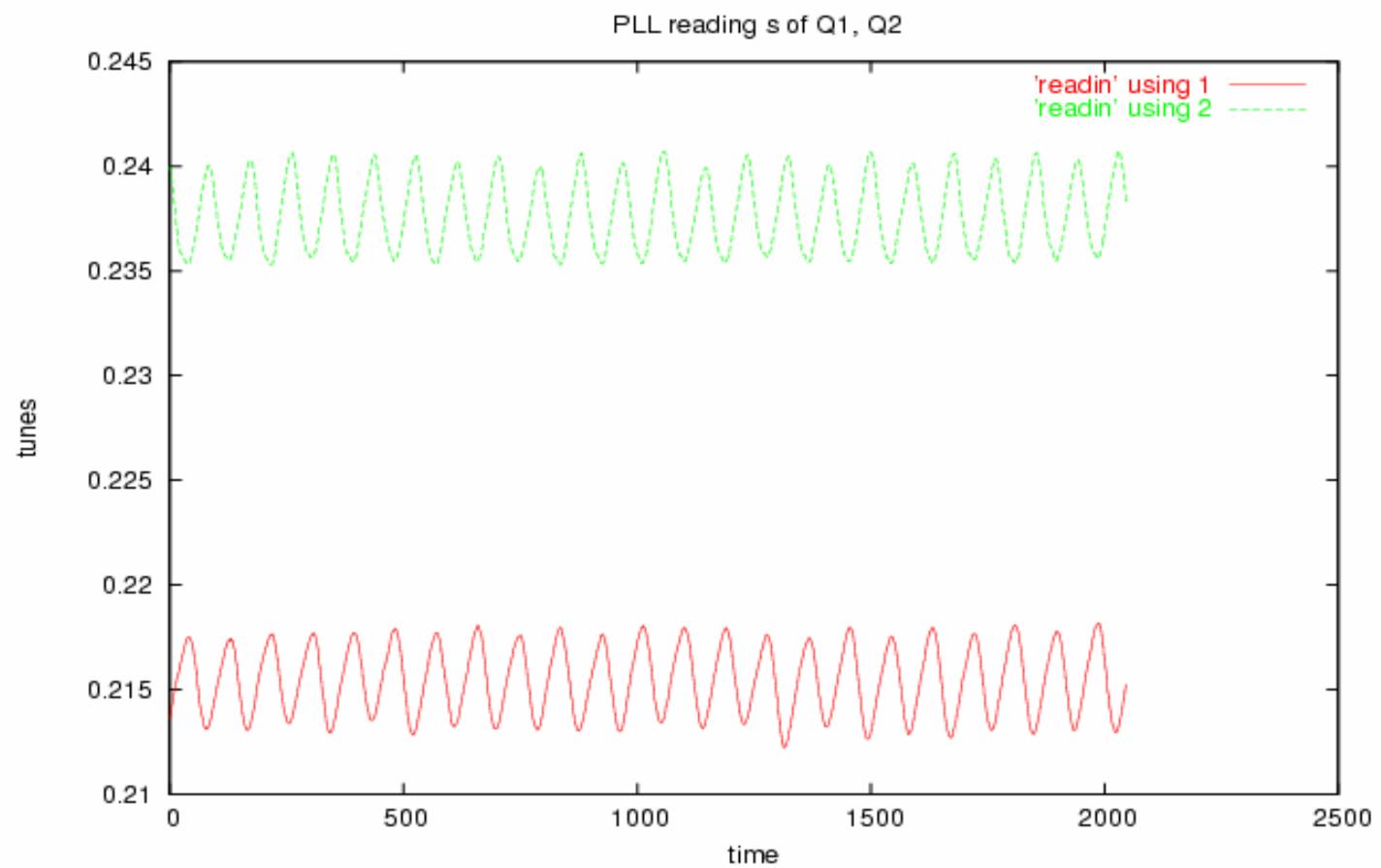
PLL data 2



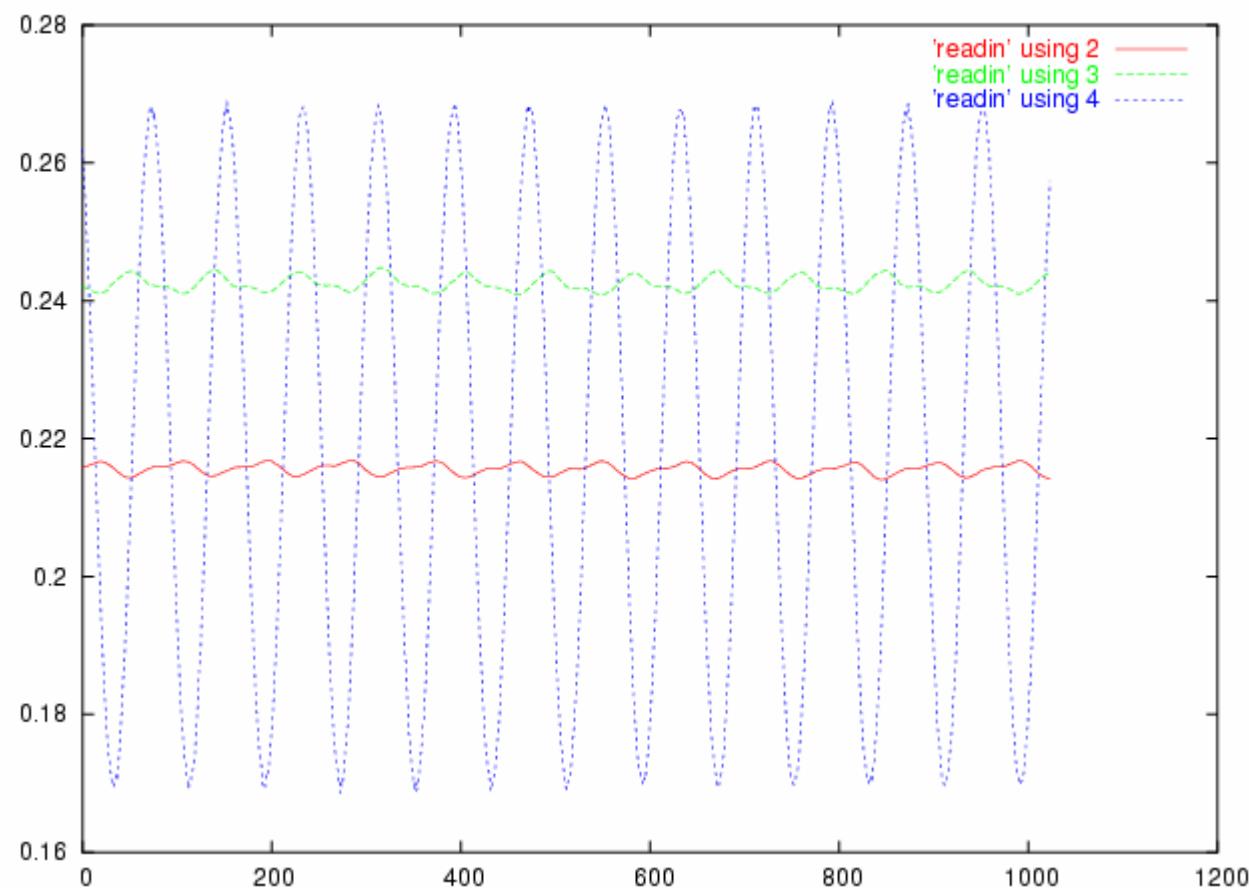
Zoom of PLL data



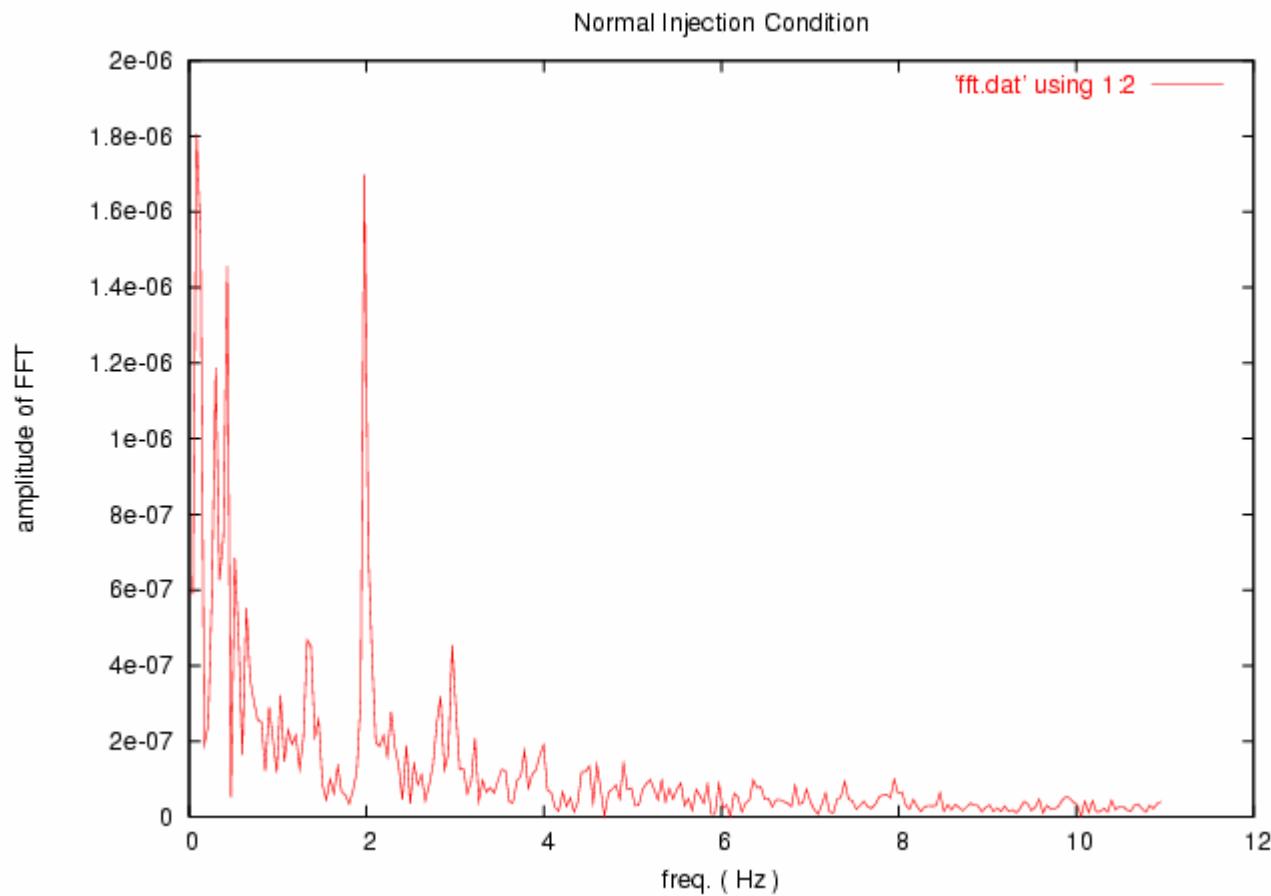
Zoom of PLL data



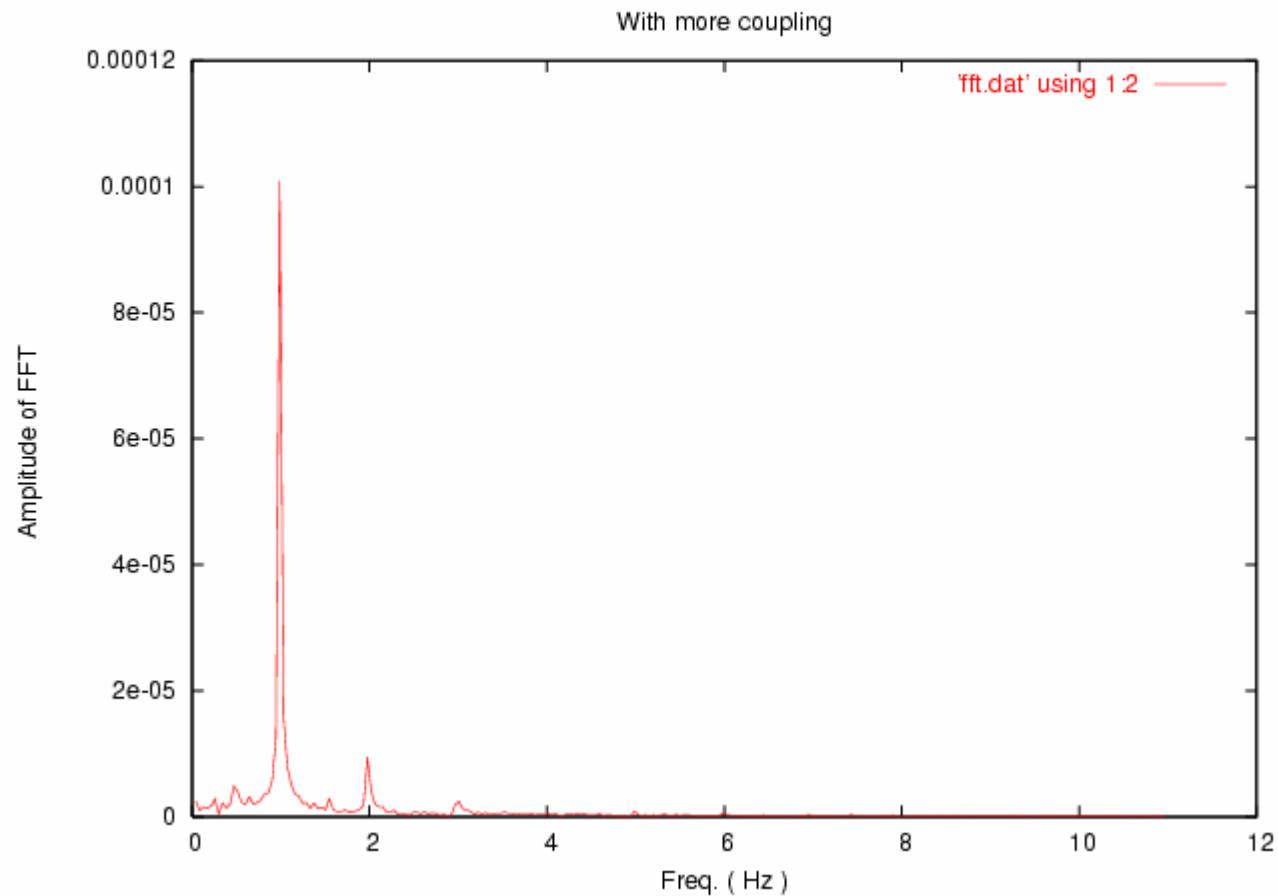
PLL data and the modulation power supply current



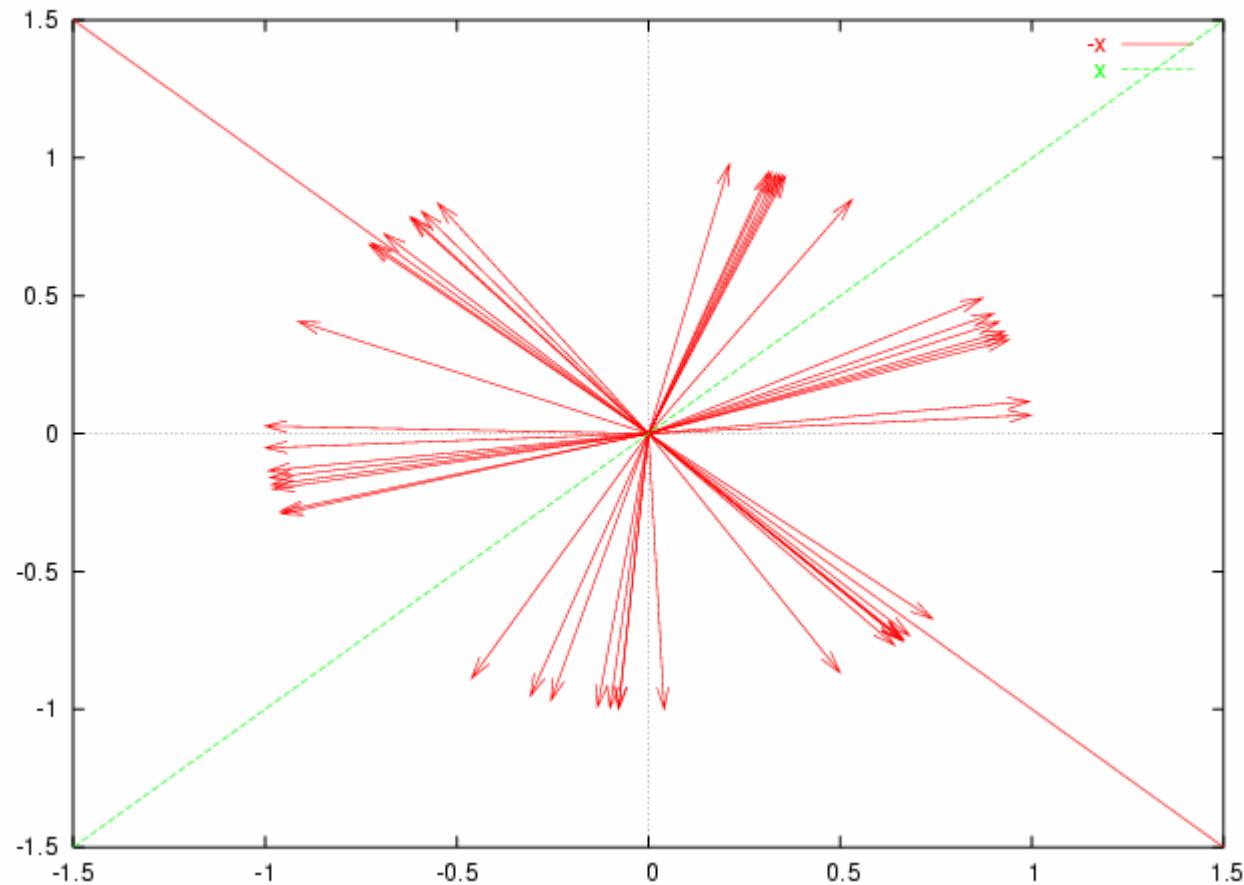
FFT of $(q_1 - q_2)^{2.0}$ for normal injection condition



FFT of $(q1-q2)^{**}2.0$ when more moupling in the ma-
chine



APPENDIX :
Coupling coefficients at store



Coupling coefficients at store

