Beam check

Ebeam=2.2GeV, momentum 2.049GeV, Longitudinal 5T – best situation

This table shows the comparison between pengjia's updated database and old database result

								new database	New database	new database	new database	old database	old database	old database	old database
run	materialID	Momentum	current/nA	yields/yields(no cut)	yield(not use raster cut)	yields/yields(no cut)	yield(use 6mm Raster cut)	Horizontal tg_x (mm)	tg_phi =dx/dz (mrad)	Vertical tg_y (mm)	tg_theta =dy/dz (mrad)	Horizontal tg_x (mm)	tg_phi =dx/dz (mrad)	Vertical tg_y (mm)	tg_theta =dy/dz (mrad)
5706	17	2.0497	37.99	1	1	1.053	1	0.33	0.02	-3.31	-0.21	2.19	1.96	-4.8	-1.77
5707	17	2.0497	36.15	1.007	1.081	1.054	1.008	0.19	-0.12	-2.82	0.32	2.99	2.81	-4.48	-1.42
5708	17	2.0497	37.77	1.007	1.001	1.051	1.006	0.22	-0.08	-2.44	0.75	2.13	1.91	-4.17	-1.05
5709	17	2.0497	48.86	0.993	0.819	1.046	0.986	0.2	-0.08	-3.24	-0.06	-0.29	-0.59	-3.74	-0.59
5710	17	2.0497	43.59	0.994	0.856	1.053	0.995	-0.23	-0.53	-3.67	-0.58	0.28	0	-4.32	-1.26
5711	17	2.0497	35.53	1.004	1.113	1.056	1.007	0.08	-0.12	-2.72	0.37	3.33	3.27	-4.4	-1.38
5712	17	2.0497	34.88	1.015	1.13	1.054	1.016	-0.08	-0.42	-2.74	0.4	3.58	3.41	-4.42	-1.36
5713	17	2.0497	45.15	1.001	0.85	1.053	1.001	0.02	-0.28	-3.7	-0.53	0.2	-0.09	-4.28	-1.14
5714	17	2.0497	45.6	0.998	0.821	1.05	0.995	-0.34	-0.68	-3.35	-0.23	-0.22	-0.54	-3.97	-0.87
5715	17	2.0497	42.29	1.003	0.849	1.044	0.995	-0.58	-0.92	-3.5	-0.38	0.24	-0.06	-4.25	-1.16
5716	17	2.0497	41.53	1	0.869	1.062	1.009	-0.47	-0.79	-3.52	-0.41	0.49	0.22	-4.3	-1.22
5717	17	2.0497	41.69	0.998	0.863	1.051	0.996	-0.52	-0.84	-3.58	-0.46	0.42	0.14	-4.34	-1.25
5718	17	2.0497	34.59	0.909	0.886	1.131	0.977	-0.37	-0.61	-3.49	-0.39	0.63	0.43	-4.28	-1.21
5719	17	2.0497	40.91	1.001	0.871	1.047	0.996	-0.55	-0.96	-3.66	-0.57	0.56	0.2	-4.45	-1.39
5720	17	2.0497	40.55	0.999	0.879	1.052	0.999	-0.58	-0.92	-3.45	-0.35	0.61	0.32	-4.29	-1.23
5721	17	2.0497	40.41	0.995	0.898	1.06	1.002	-0.31	-0.62	-3.53	-0.4	0.88	0.61	-4.36	-1.27
5726	17	2.0497	43.22	1.001	0.848	1.057	1.005	-0.39	-0.72	-3.55	-0.43	0.21	-0.09	-4.24	-1.16
5727	17	2.0497	42.51	1.008	0.857	1.047	1.003	-0.44	-0.77	-3.55	-0.43	0.31	0.02	-4.28	-1.19
5728	17	2.0497	42.46	0.998	0.852	1.057	1.002	-0.48	-0.82	-3.42	-0.32	0.27	-0.03	-4.17	-1.11
5729	17	2.0497	40.86	1.009	0.882	1.05	1.007	-0.45	-0.77	-3.71	-0.6	0.67	0.4	-4.49	-1.42
5730	17	2.0497	40.68	1.006	0.882	1.059	1.012	-0.49	-0.82	-3.33	-0.23	0.65	0.37	-4.18	-1.12

More runs till run 5777… for this setting

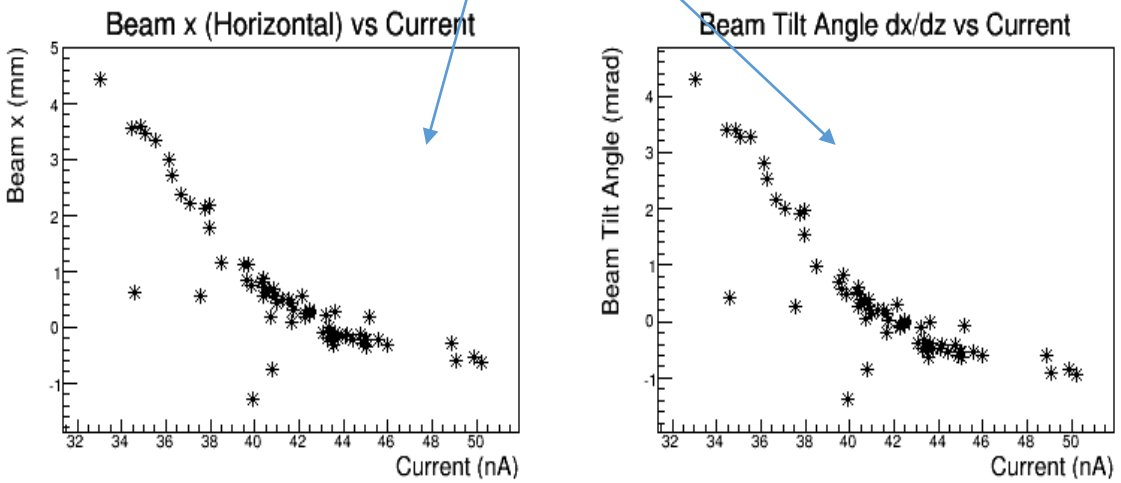
Ebeam=2.2GeV, momentum 2.049GeV, Longitudinal 5T – best situation

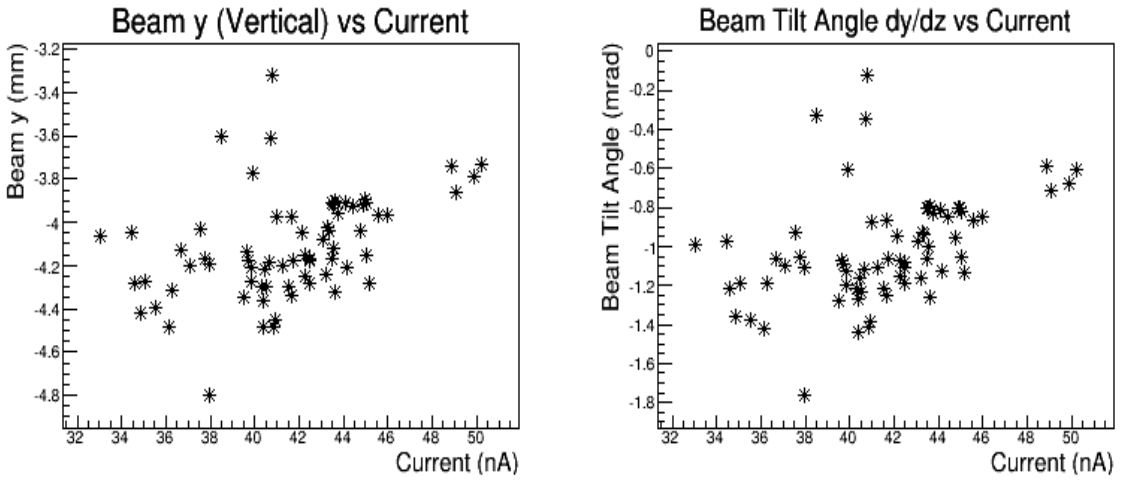
These two plots shows the comparison between pengjia's updated database and old database result

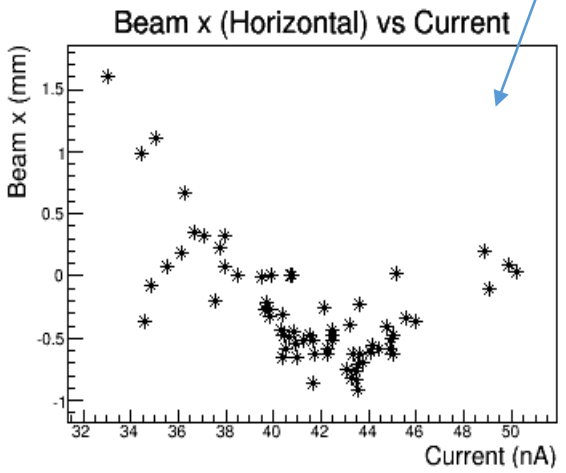
Each mark stands for one run in the plot

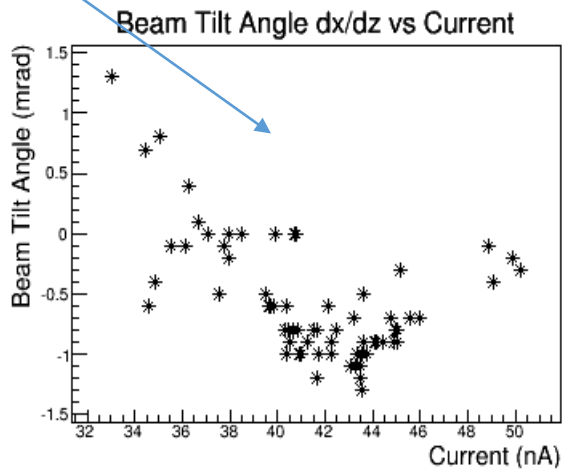
Using the old database

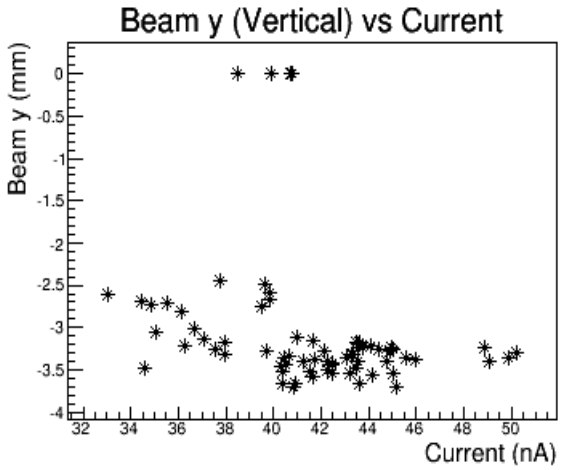
Using the new database

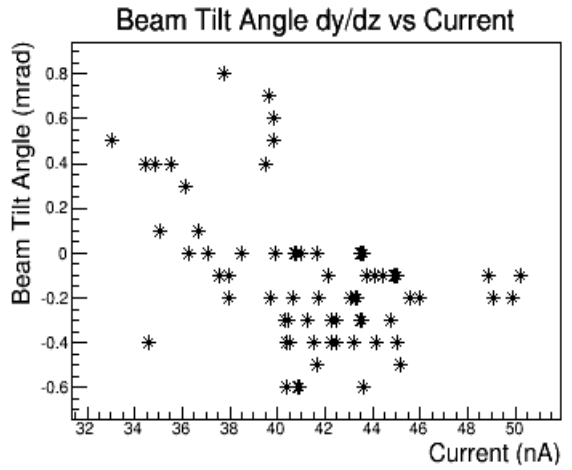












Ebeam=2.2GeV, momentum 2.049GeV, Longitudinal 5T – best situation

Questions:

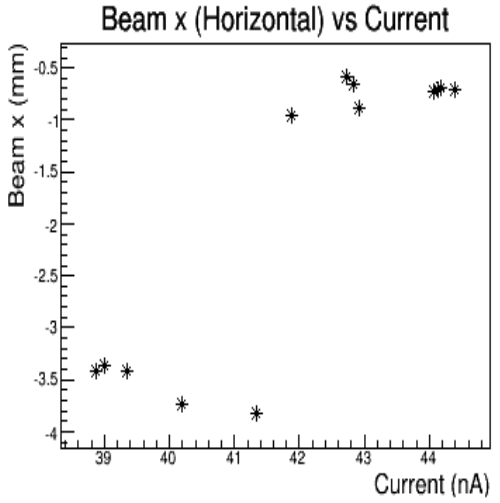
The previous plots shows run from 5706-5777 for this momentum setting.

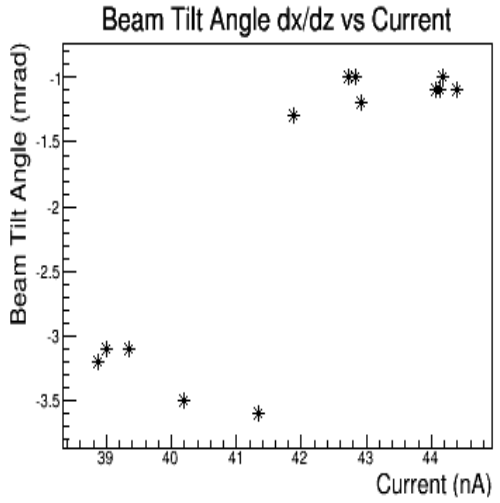
1. You have two calibration file for this momentum setting. One for run 5709-5710, 5713-5730, 5734-5736, 5738 -5816, the other is for run 5706-5708, 5711-5712, 5731-5733, 5737. Are they for different current region? How do you define it? I notice 5769-5775 also current <40nA
2. Look at previous slide, we can still see the difference is around 3mm in horizontal x, and linear shape there?
3. See a 3mm jump in the vertical y, bigger than before?

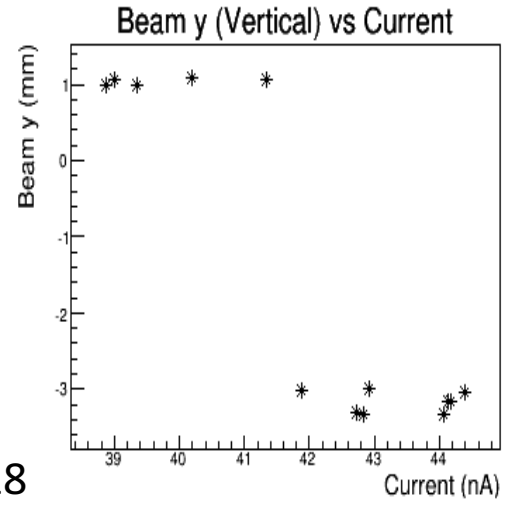
Ebeam=2.2GeV, momentum 1.886GeV, Longitudinal 5T – best situation

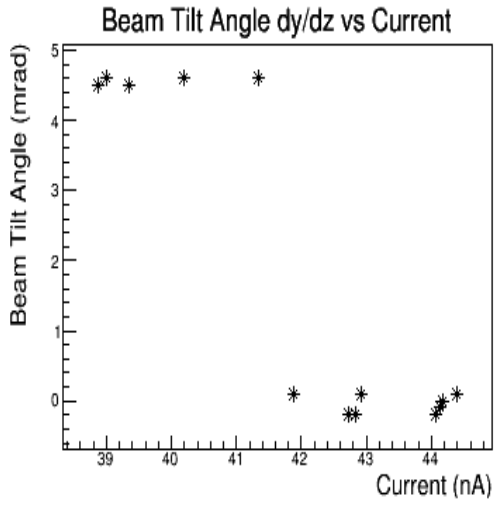
This table shows the comparison between pengjia's updated database for momentum 1.886GeV

					new database	New database	new database	new database
run	materialID	Momentum	current/nA	yield(use 6mm Raster cut)	Horizontal tg_x (mm)	tg_phi =dx/dz (mrad)	Vertical tg_y (mm)	tg_theta =dy/dz (mrad)
5809	17	1.8857	44.07	1	-0.72	-1.05	-3.34	-0.22
5810	17	1.8857	44.39	1.005	-0.71	-1.06	-3.05	0.07
5811	17	1.8857	44.12	1.003	-0.71	-1.05	-3.16	-0.06
5812	17	1.8857	44.17	1.001	-0.7	-1.05	-3.16	-0.05
5813	17	1.8857	42.92	0.997	-0.88	0.11	-3	-1.25
5814	17	1.8857	41.89	1.01	-0.95	0.11	-3.02	-1.3
5815	17	1.8857	42.84	1.005	-0.65	-0.2	-3.33	-0.98
5816	17	1.8857	42.72	1.004	-0.59	-0.2	-3.32	-0.95
5818	17	1.8857	39.35	1.002	-3.41	-3.14	0.98	4.53
5819	17	1.8857	41.33	1.006	-3.83	-3.6	1.07	4.6
5820	17	1.8857	40.19	1.005	-3.74	-3.51	1.08	4.6
5821	17	1.8857	39	1.021	-3.36	-3.11	1.07	4.6
5822	17	1.8857	38.88	1.006	-3.41	-3.15	0.98	4.51









3 hours beam down (target anneal) between run 5816 and run 5818
Beam position Jump happened when it back

Ebeam=2.2GeV, momentum 1.886GeV, Longitudinal 5T – best situation

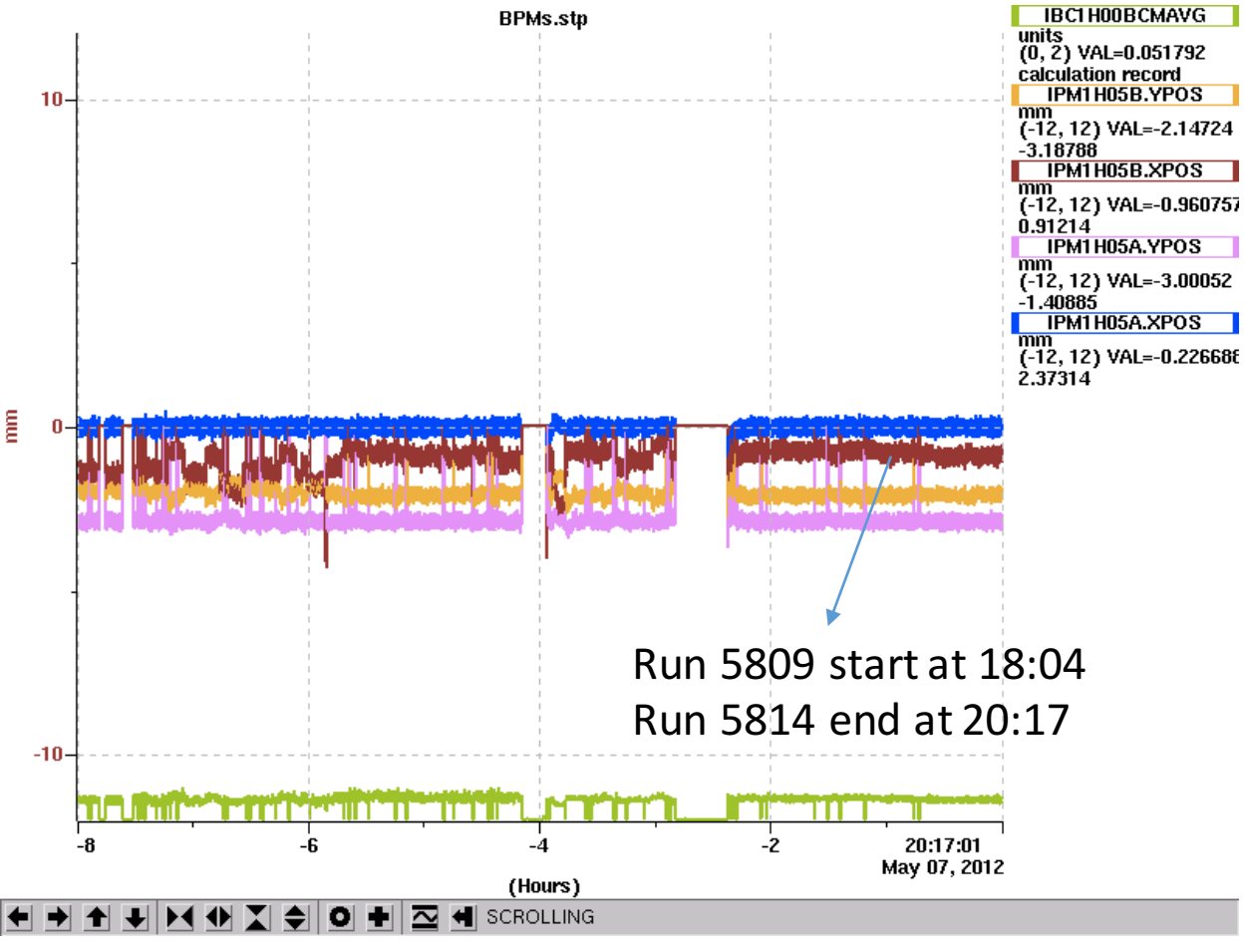
These two plots shows online bpm information before beam down and after beam down for previous slide

Each mark stands for one run in the plot

Before beam down

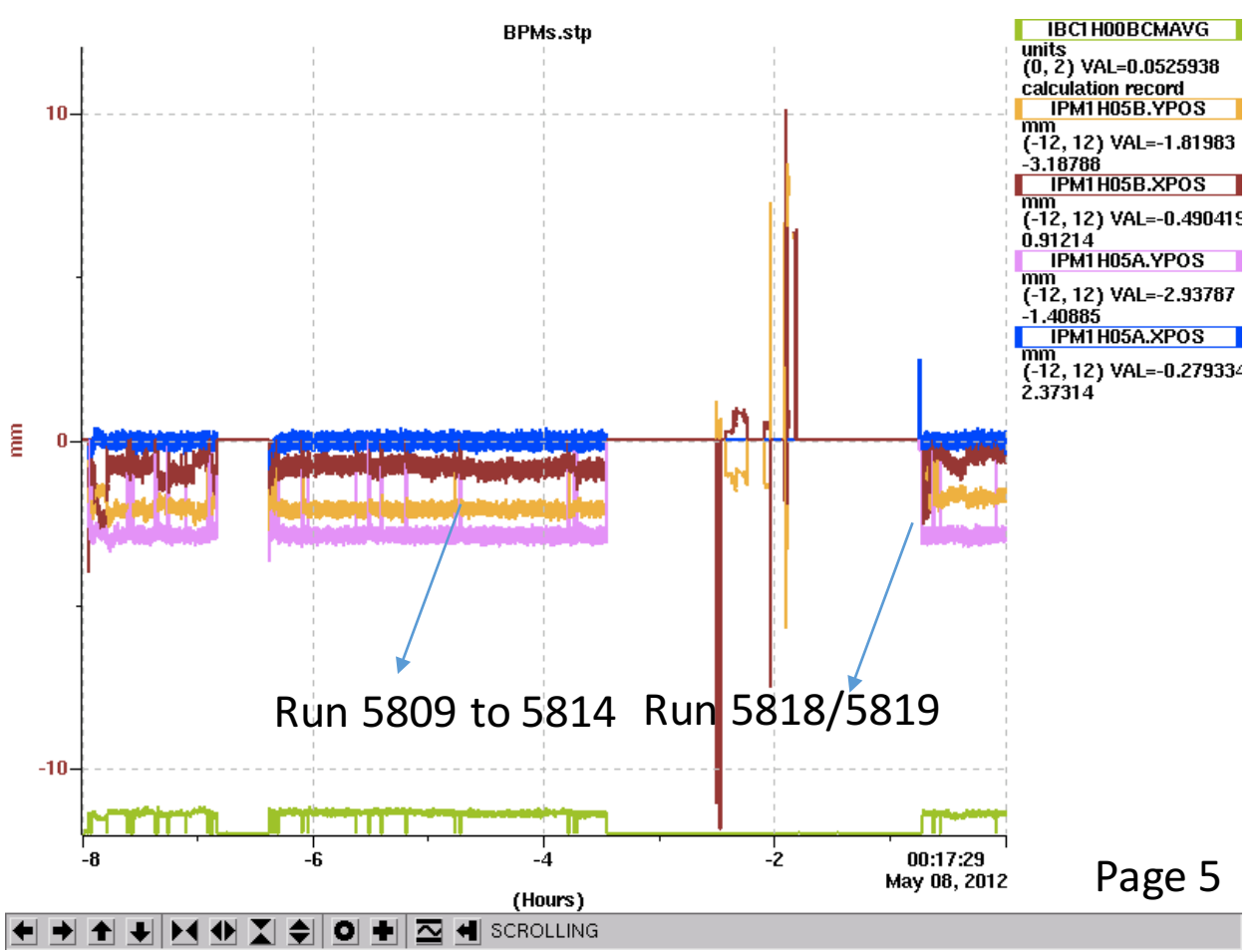
beam back

Online information did not show jump



Run 5809 start at 18:04

Run 5814 end at 20:17



Run 5809 to 5814

Run 5818/5819

Ebeam=2.2GeV, momentum 1.886GeV, Longitudinal 5T – best situation

Questions:

The previous plots shows run from 5809-5822 for this momentum setting.

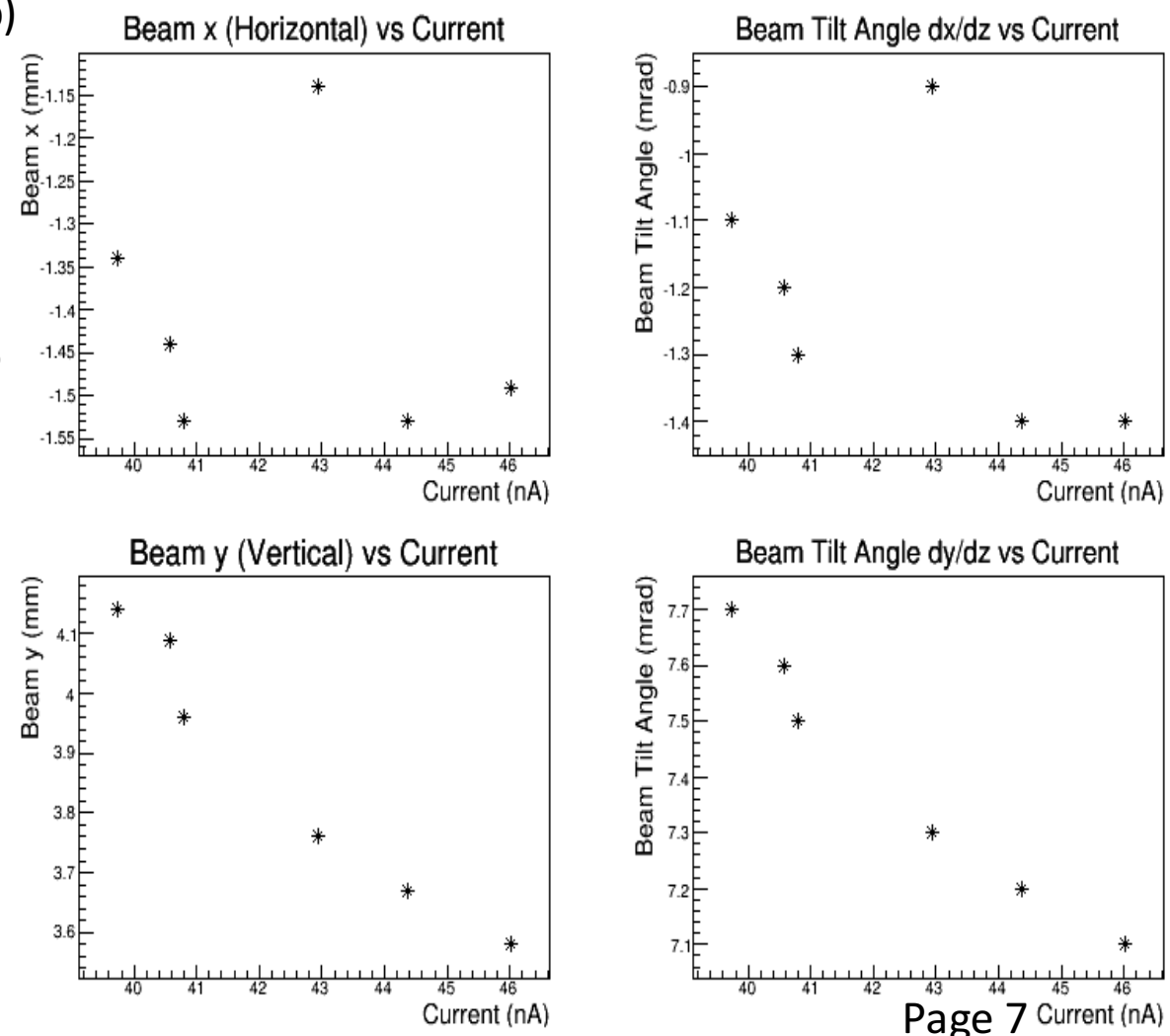
1. Online information did not show jump in beam position and yields shows no changes, but calibrated beam information shows?

Ebeam=2.2GeV, Longitudinal 5T – best situation

Questions:

You said there is no current dependence for run 5872-5877 and 5838-5851, so you donnot update the database for it. Just use the old database (calibrated by harp)

1. So it means, in one energy setting, some of momentum settings have current dependence, and others does not have?
2. These runs at different current < 50 nA, How do you relate these runs to the calibration runs at high current?
3. The left plot show for run 5872-5877, actually there is a Linear shape in y and dy/dz. Note: the yields spread within 0.8%



Ebeam=2.2GeV, Longitudinal 5T – best situation

Questions:
For run 5838-5851, you donnot update the database for it. Just use the old database. Yields shows almost no change from run 5842 to 5843 and online information also thes same, but calibrated beam jumps?

					old database	old database	old database	old database
run	materiallD	Momentum	current/nA	yield(use 6mm Raster cut)	Horizontal tg_x (mm)	tg_phi =dx/dz (mrad)	Vertical tg_y (mm)	tg_theta =dy/dz (mrad)
5838	17	1.4684	40.88	1	-0.67	-0.42	2.8	6.31
5839	17	1.4684	41.61	0.992	-1.81	-1.63	2.97	6.48
5840	17	1.4684	42.59	0.993	-3	-2.87	2.32	5.78
5841	17	1.4684	45.7	0.977	-2.02	-1.9	1.8	5.24
5842	17	1.4684	46.39	0.973	-4.54	-4.54	0.37	3.74
5843	17	1.4684	49.78	0.966	-1.43	-1.3	3.09	6.57
5844	17	1.4684	51.21	0.969	-2.07	-2	2.88	6.34
5845	17	1.4684	54.02	0.969	-1.23	-1.12	2.79	6.25
5846	17	1.4684	54.27	0.985	-0.99	-0.89	2.88	6.33
5850	17	1.4684	45.98	0.973	-1.71	-1.56	3.37	6.87
5851	17	1.4684	43.05	0.983	-1.85	-1.68	3.91	7.42