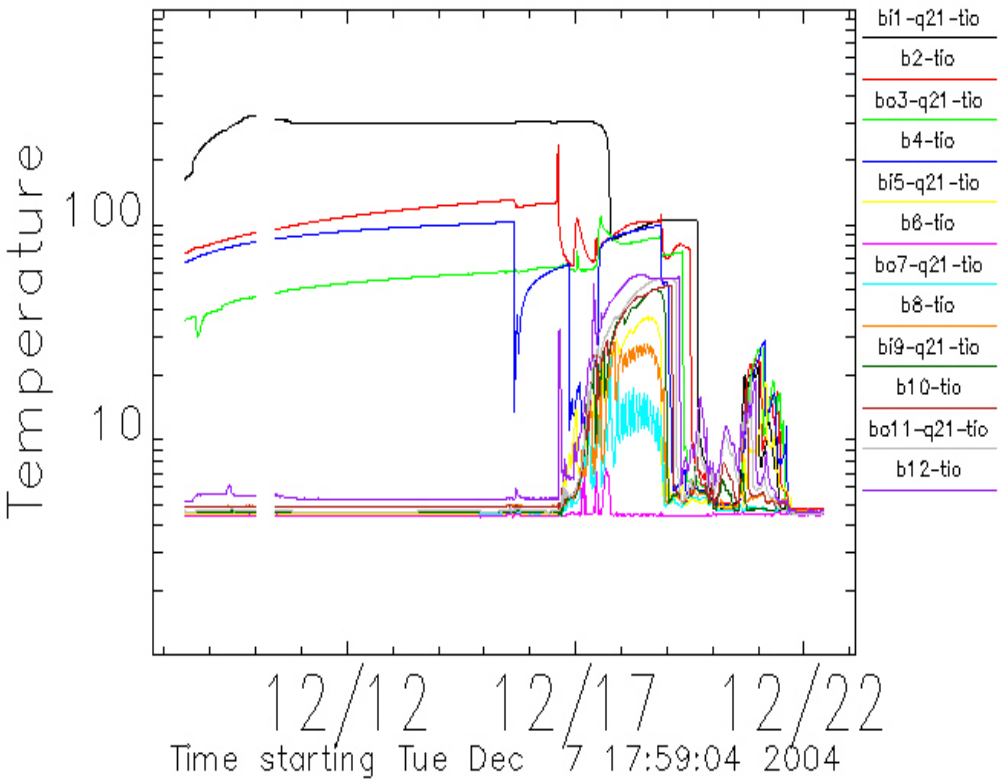
Machine status

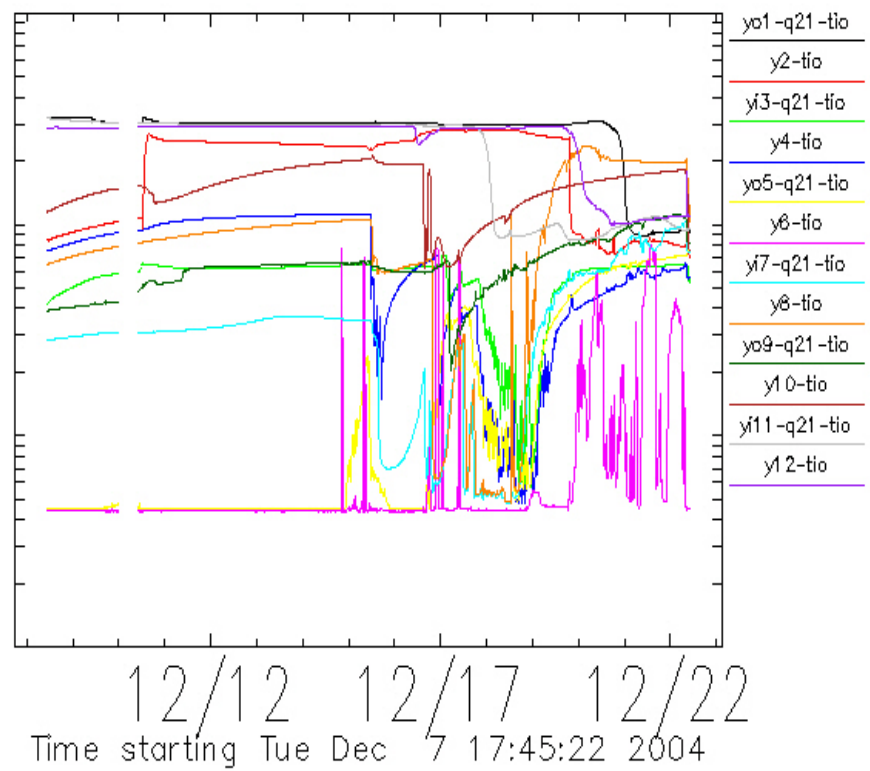
- Cryo, beam schedule
- Preparation for operations (ramps, leaders,…)
- Injectors
- RHIC, plan of the day
- Collision and event rates for possible operating scenarios
- The Cu28+ “beam”

Cryo→beam schedule

Blue: ring at operating conditions, PS tests in progress

Yellow: 4K wave started, ETA for operating conditions Sunday 26, beam Monday 27





Initial prediction Cu8 yellow trims

Todd

(*) Y(Cu8)=B(Cu8)+(Y(Au4)-B(Au4))

Brho	B(Qx)	B(Qy)	B(Chrx)	B(Chry)	Y(Qx)	Y(Qy)	Y(Chrx)	Y(Chry)
81.1138	28.229	29.23	-6	-2	28.247	29.245	-8.4	1.3
81.4531	28.257	29.22	-3	-6	28.275	29.235	-5.4	-2.9
88.1242	28.255	29.208	-6	-3	28.273	29.221	-8	-2.5
99.4246	28.267	29.2	-1	-5	28.273	29.213	-2.1	-4.9
116.375	28.262	29.2	-1	-2	28.276	29.213	-0.8	-2.6
133.801	28.27	29.2	-1	-4	28.286	29.214	2.1	-5.8
144.396	28.265	29.21	-1	-1	28.287	29.225	5.2	-4.4
151.223	28.263	29.2	-1	-1	28.285	29.215	6	-6
160.875	28.258	29.2	0	11	28.280	29.215	6.8	5.5
168.527	28.255	29.205	0	11	28.277	29.225	5	10
182.064	28.25	29.215	1	9	28.275	29.223	7.4	7.3
213.684	28.2469	29.2191	-5.8	13.7	28.273	29.222	-0.7	12.8
277.301	28.23	29.22	2	10	28.255	29.225	5	11
389.128	28.21	29.21	5	3	28.229	29.217	12.3	4.3
500.954	28.21	29.21	3	3	28.228	29.215	8.9	5.5
612.781	28.225	29.209	0	8	28.241	29.223	1.1	13.0
701	28.205	29.192	0	9	28.224	29.215	-0.6	14.9
724.608	28.202	29.207	-1	9	28.211	29.250	-2	9.6
724.608	28.205	29.193	-1.5	11	28.214	29.236	-2.5	11.6
724.608	28.205	29.205	-2	7	28.214	29.248	-3	7.6
724.608	28.2	29.207	-2.5	1	28.209	29.250	-3.5	1.6

→Implemented in ramp Cu8

Back to operations

8:30 Run-5 meetings restarted today

Will run 8:30 meetings through holidays, with the exception of Xmas morning

Widened-up the pool of physicists supporting RHIC operations – motivation:

- Training for physicist shifts (→shortage for PP run)
- wider run-data analysis
- (More effective teams for beam experiments later on)

Goal: 4 'trainees'→2 more shift leaders at the end of ramp-up phase

Injectors: Tandem, Booster OK, AGS in progress, consistent with beam in RHIC late tonight

Plan of the day - today

Day:
PS testing, blue ring

Evening/ Owl: **beam** (expected ~**10pm**):

- **Injection set-up**

re-establish **AtR**, **injection** (after hysteresis)
re-establish **first turn**, **lifetime** at injection
check/adjust **longitudinal** (RF capture), rev-tick
check/correct orbit (mean,rms), tunes, chrom, coupling

- **Instrumentation** "check-off" list

BPMs (Todd)
Artus (Angelika)
WCM (RogerL)
PLL (PeteC)
IPM (RogerC, SteveT)
BLMs (Mei)
Coherence, **dampers** (Rob)
Schottky (Kurt)

- **Ramps**

6 bunch ramps (initial intensity ~2-3e9/bunch)
re-establish blue ramp to store

Operating scenarios

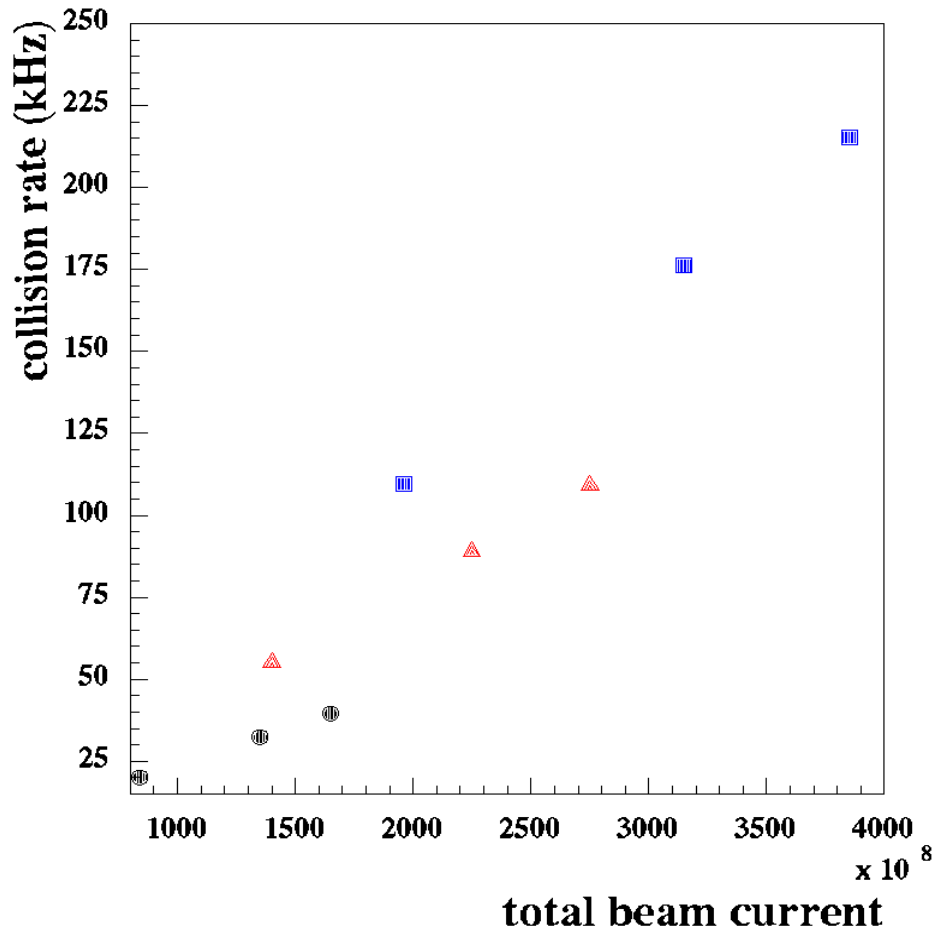
Angelika

Evaluate **collision** and **event** rates for possible operating scenarios:

Number of bunches

Bunch intensity

	28	45	55
3e9	84	135	165
5e9	140	225	275
7e9	196	315	385



Cu28+ "beam"

Steve, Wolfram,…

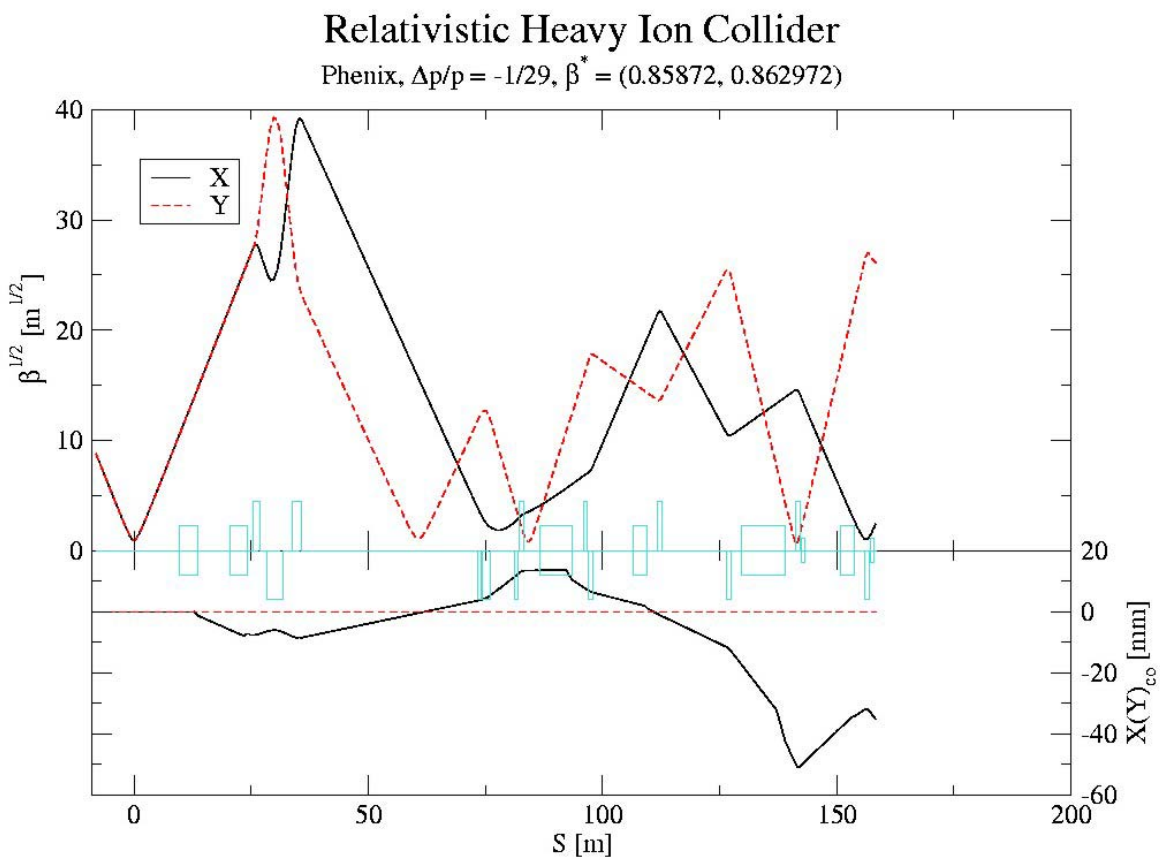
Collision→e+e- production→recombination

Cross section ~$Z^8/[e(2\pi/\alpha Z)-1]$

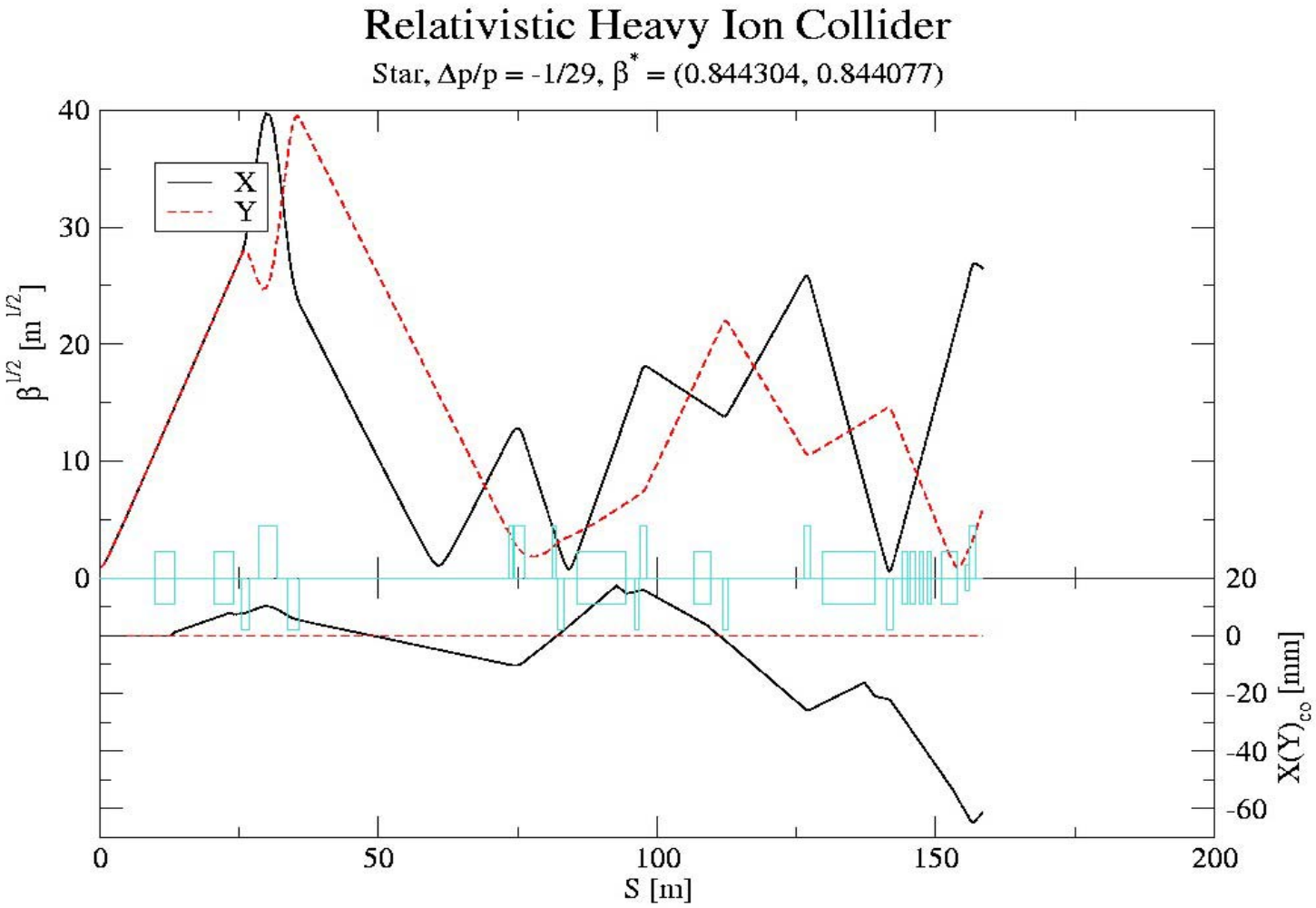
Au78+ inside beam momentum aperture, Cu28+ outside

Questions:

- Where does Cu28+ end?
- Operational concern?
- Can we measure it from BLM's and pin diodes?
- Experiment?



Cu28+ “beam”


Relativistic Heavy Ion Collider
Star, Δp/p = -1/29, β* = (0.844304, 0.844077)
X
Y
β^1/2 [m^1/2]
X(Y)co [mm]
S [m]
40
30
20
10
0
20
0
-20
-40
-60
0
50
100
150
200