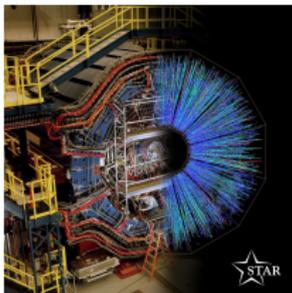


STAR Status From March 10th to March 17th

Zilong Chang

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March 17, 2020

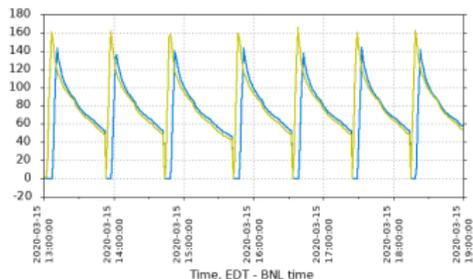


Physics running at 9.2 GeV

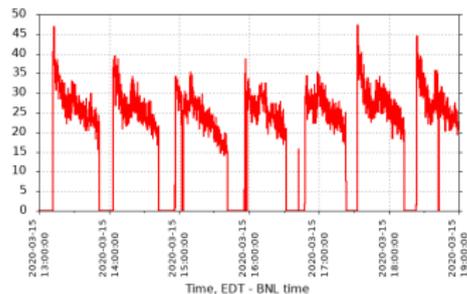
- STAR detector components: BBC, VPD, TOF, TPC, BEMC, and ETOF
- Event selection: high level trigger (HLT) system
- HLT effective rate = $\text{HLT}_{\text{vtx70}} + 0.3 \times (\text{HLT}_{\text{vtx150}} - \text{HLT}_{\text{vtx70}})$
- Have collected 38 M HLT effective events as of this morning, out of the 160 M goal

Day	Hours of running	Number of events (in M)	Event rate (Hz)
03/10	18.4	2.2	33
03/11	12.1	1.4	31
03/12	9.0	1.0	32
03/13	16.2	2.0	33
03/14	18.3	2.3	34
03/15	19.0	2.4	35
03/16	16.9	2.0	33

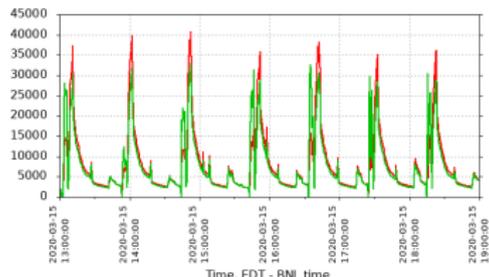
Beam conditions and event rates



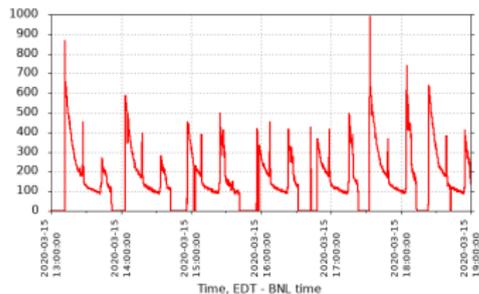
blueions —
yellowions —



HLT good (70cm vtx) —



BBCE —
BBCW —



MB taken —

- Fill intensities are consistent among fills
- BBC singles rates peak at: injection, 1st and 2nd beta, un-squeeze at the end of fill, due to high backgrounds
- Min-bias event rates also peak at both beta squeezes during the fill
- HLT vtx 70 rate starts at 40 Hz and drops down to 20 Hz with LEReC

Summary

- Other issues:
 - AGS/EBIS problem caused fills with low beam intensity, and extended fill length
 - A couple of magnet trips
 - High background due to beam losses during injection or improper collimator settings from beta squeezes often tripped our TPC anode and ETOF
- Average rate per day: 31 Hz, average running hours per day: 15 hours, and average number of events per day: 1.7 M
- Expect to achieve goal for 9.2 GeV collisions (160 M HLT effective events) by the end of May, if no interruption

