STAR Weekly Time Report

Period Coordinator

Zhangbu Xu

04/30--05/07/2024

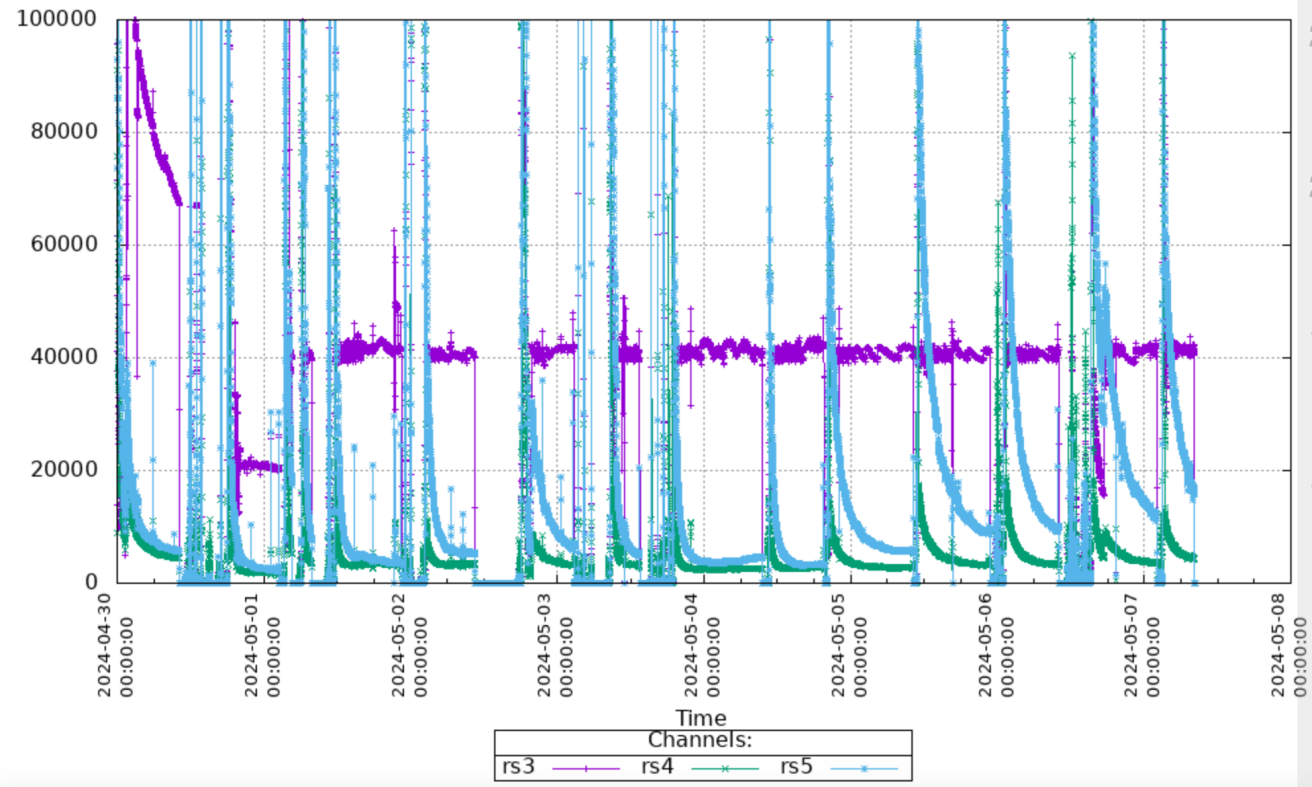
Weekly Summary

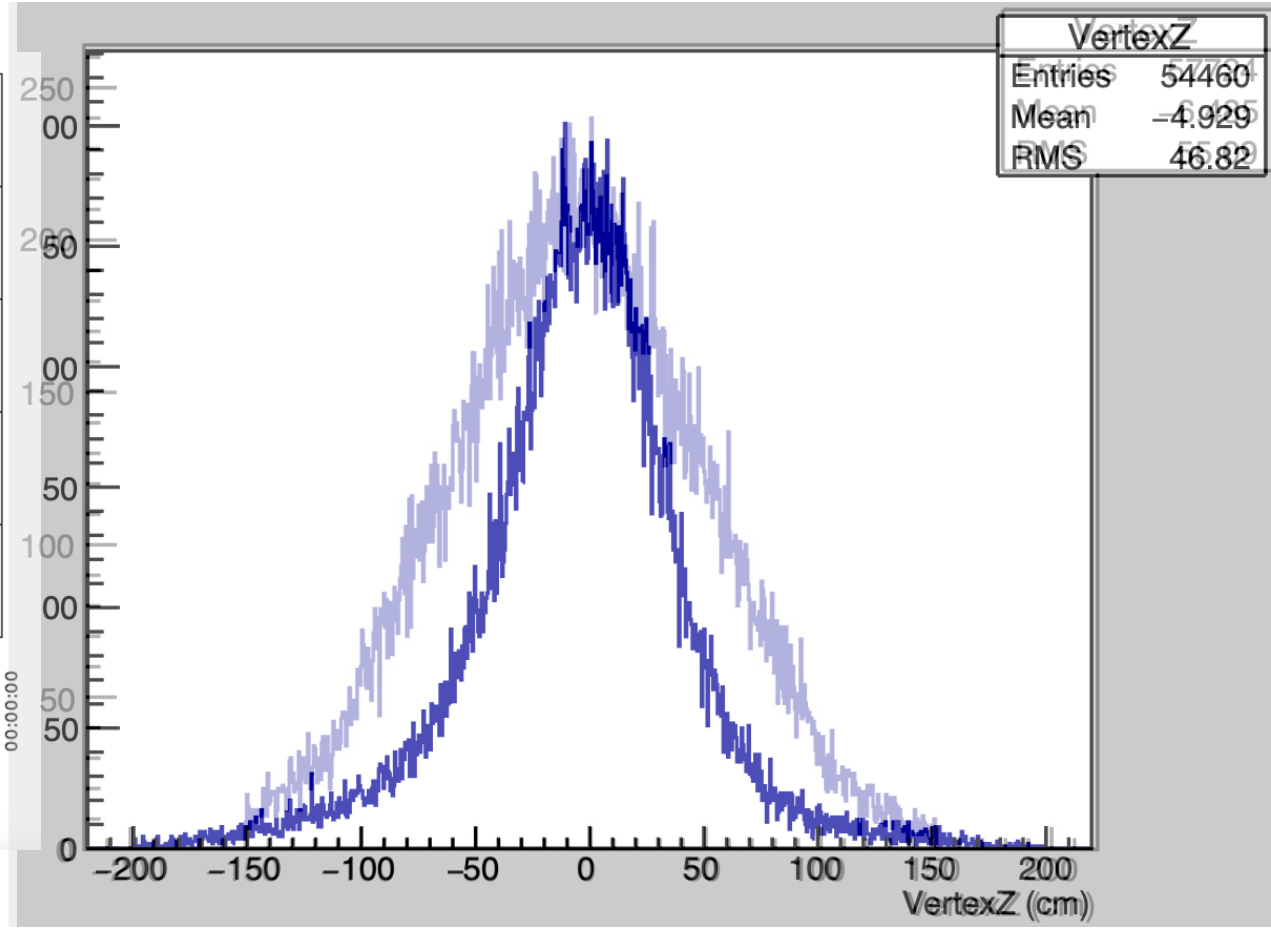
- Physics:
  04/30 3:46AM
  BBCA trigger and EPDA commissioning: 3KHz
- Physics Data
  05/01 5:22PM
  EPD Physics Trigger: 5.8KHz
- Luminosity leveling
  20KHz BBCA (05/01)
  40KHz BBCA (05/02--)
- Accumulate datasets:
  Minbias: 800M evts
  High-Multiplicity: 850M evts

- Timed in all detectors (DONE)
- Improve trigger deadtime (DONE)
- Optimizing run conditions
- Timed in polarimetry scaler in progress
- Commissioning forward detectors in progress

- Blue Background High
- STAR Control Room AC Unit

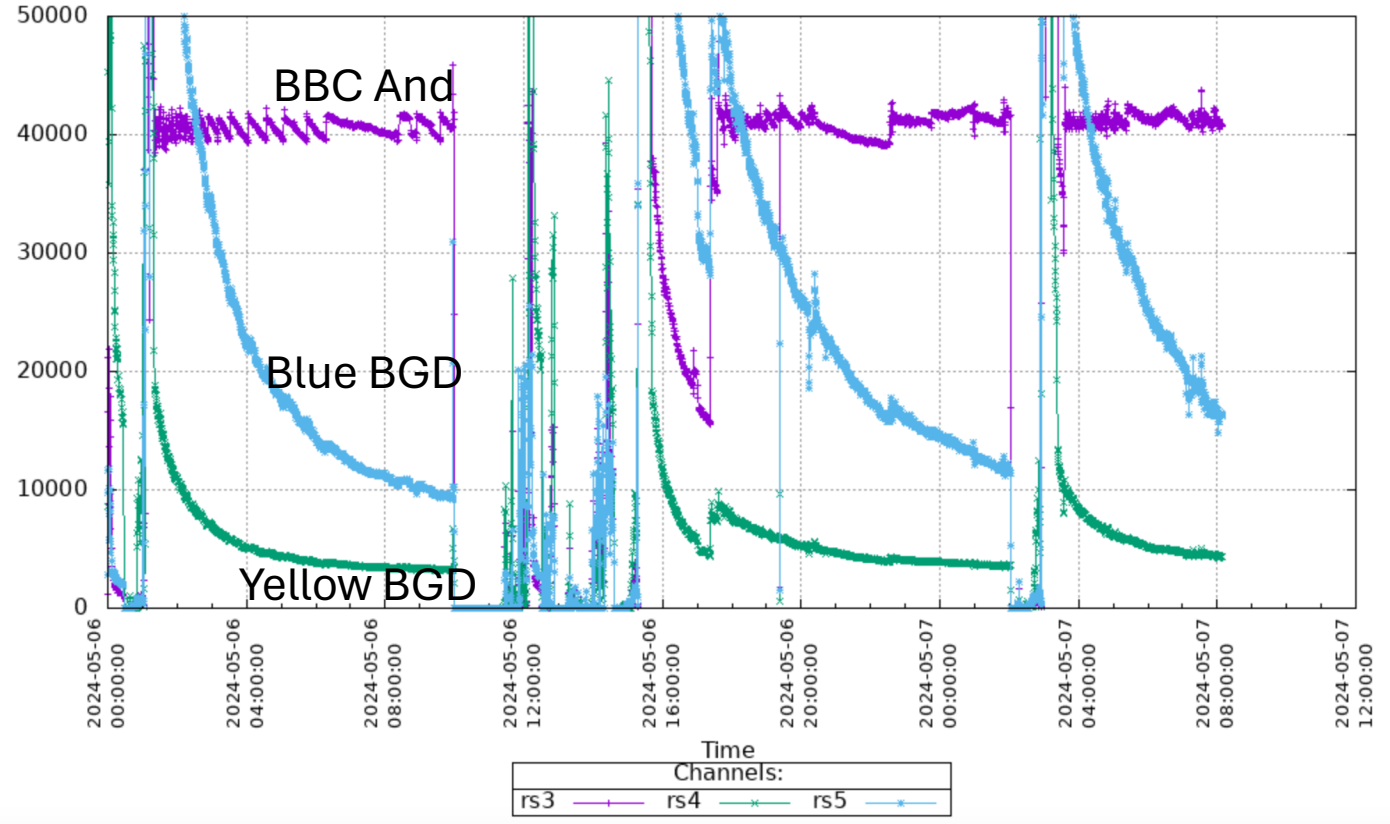
Luminosity Leveling and Crossing Angle





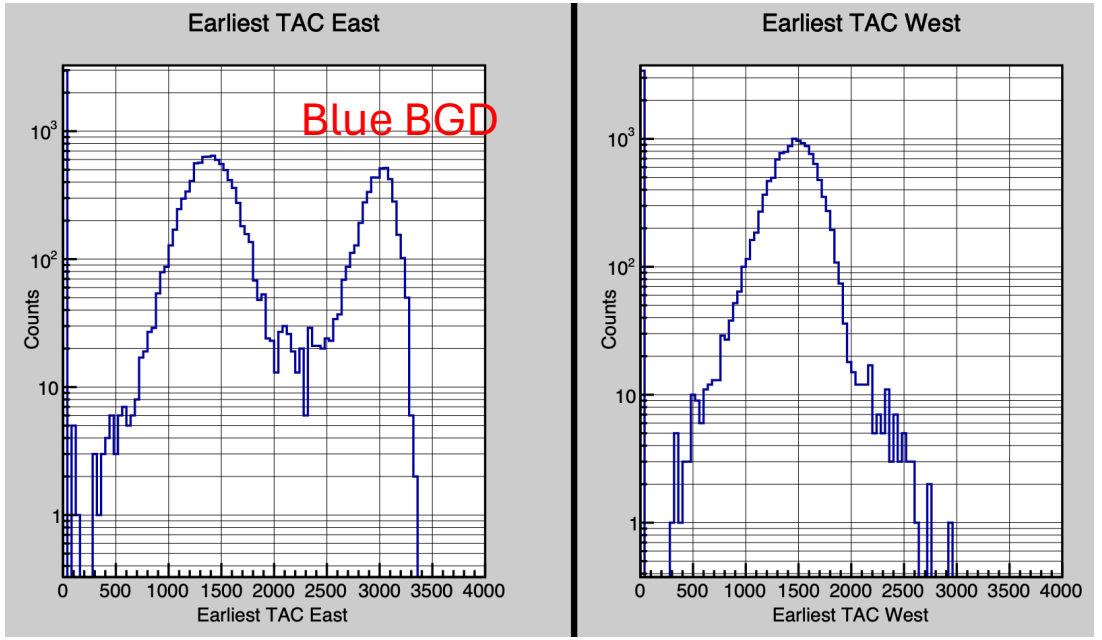
Leveling at 40KHz
Cross Angle: 1mrad

Blue Beam Background

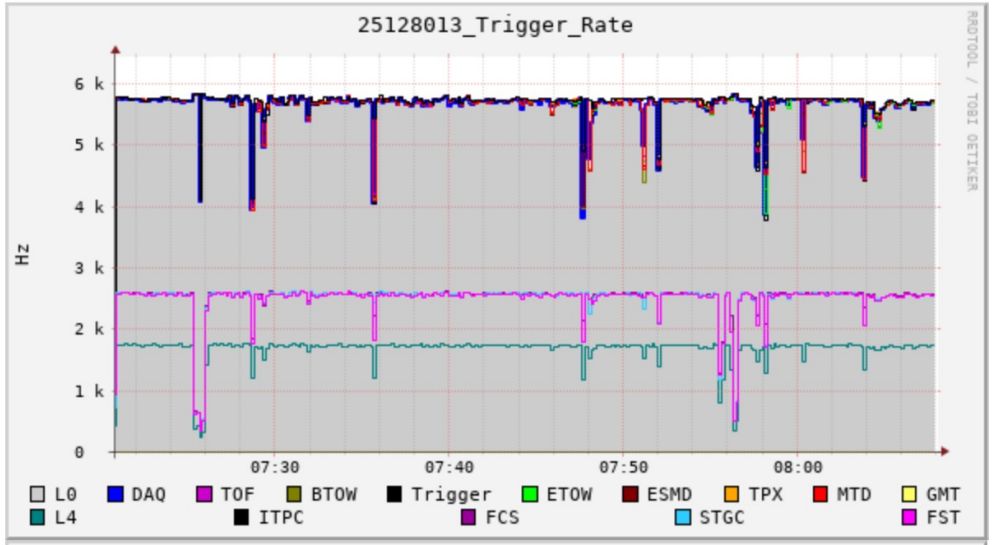


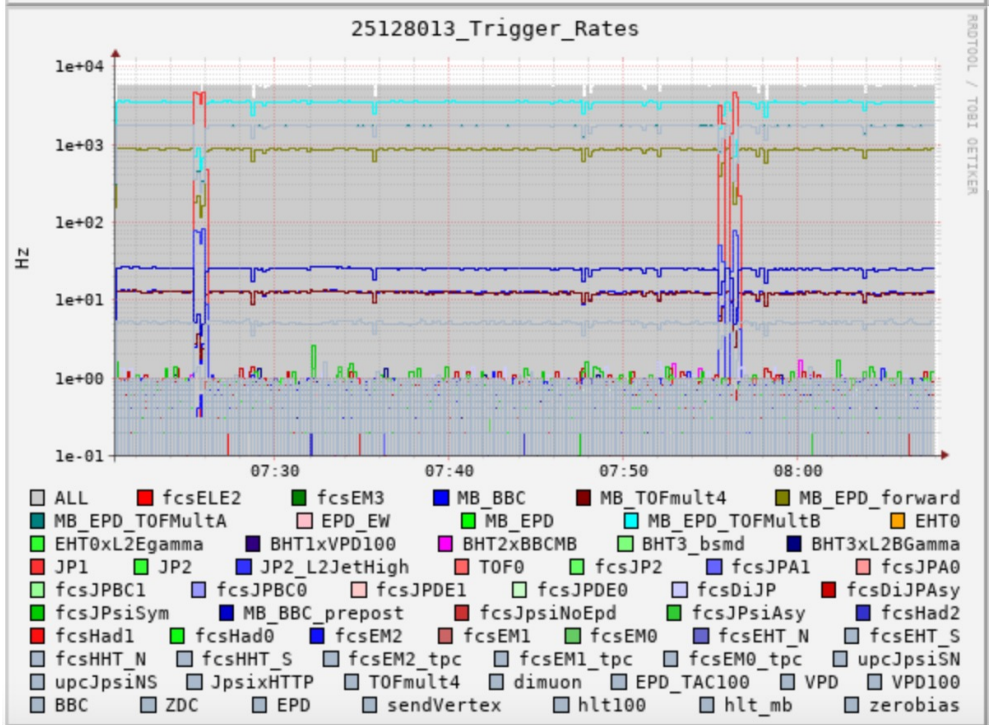
Blue Beam Background high at beginning of fill
Online BBC Trigger not able to reject
EPD Time window wide enough to see the background and reject

Event-Plane Detector Timing



Data-taking at high rate (5.8KHz)



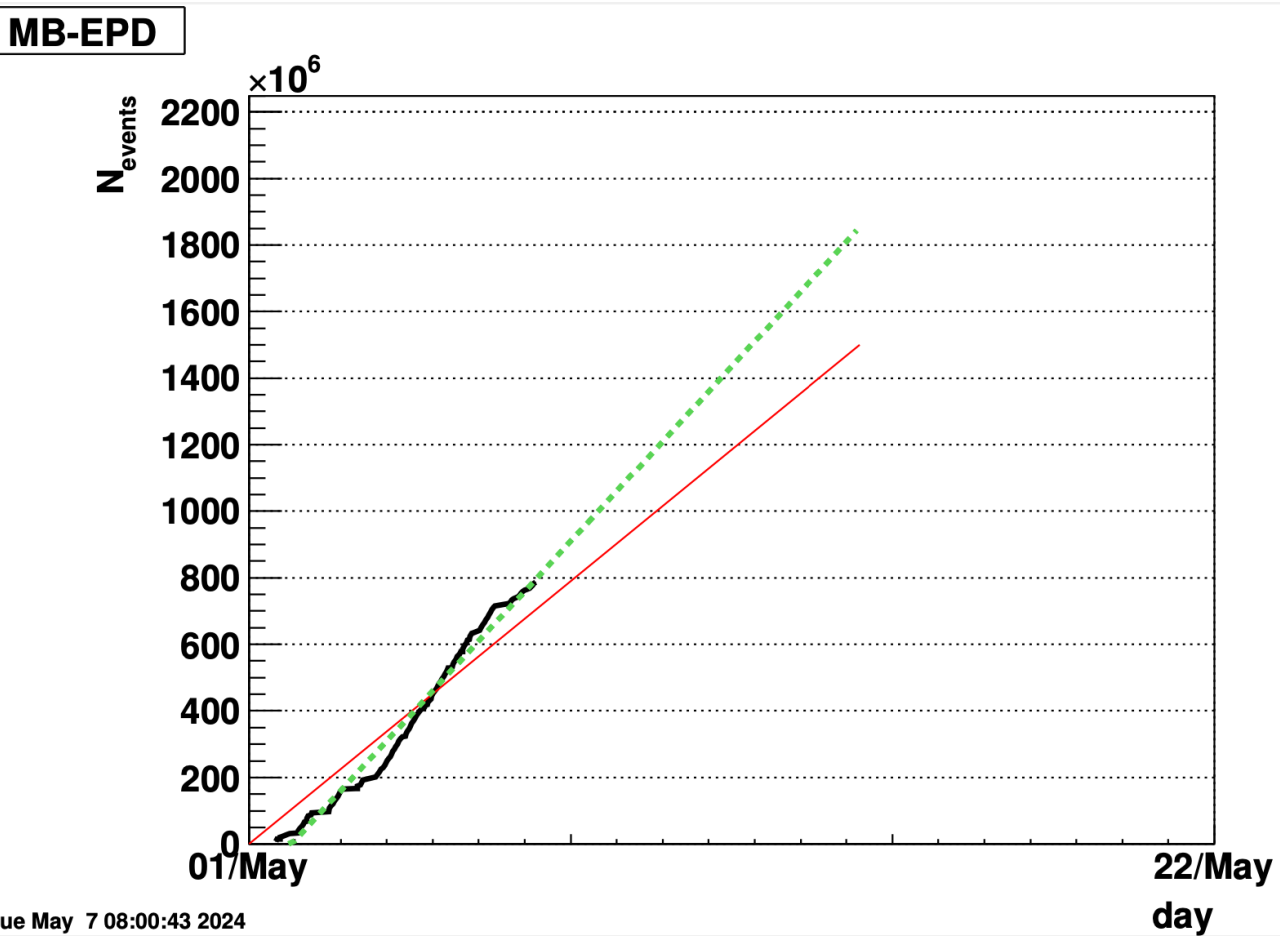


STAR Data-Taking Rate

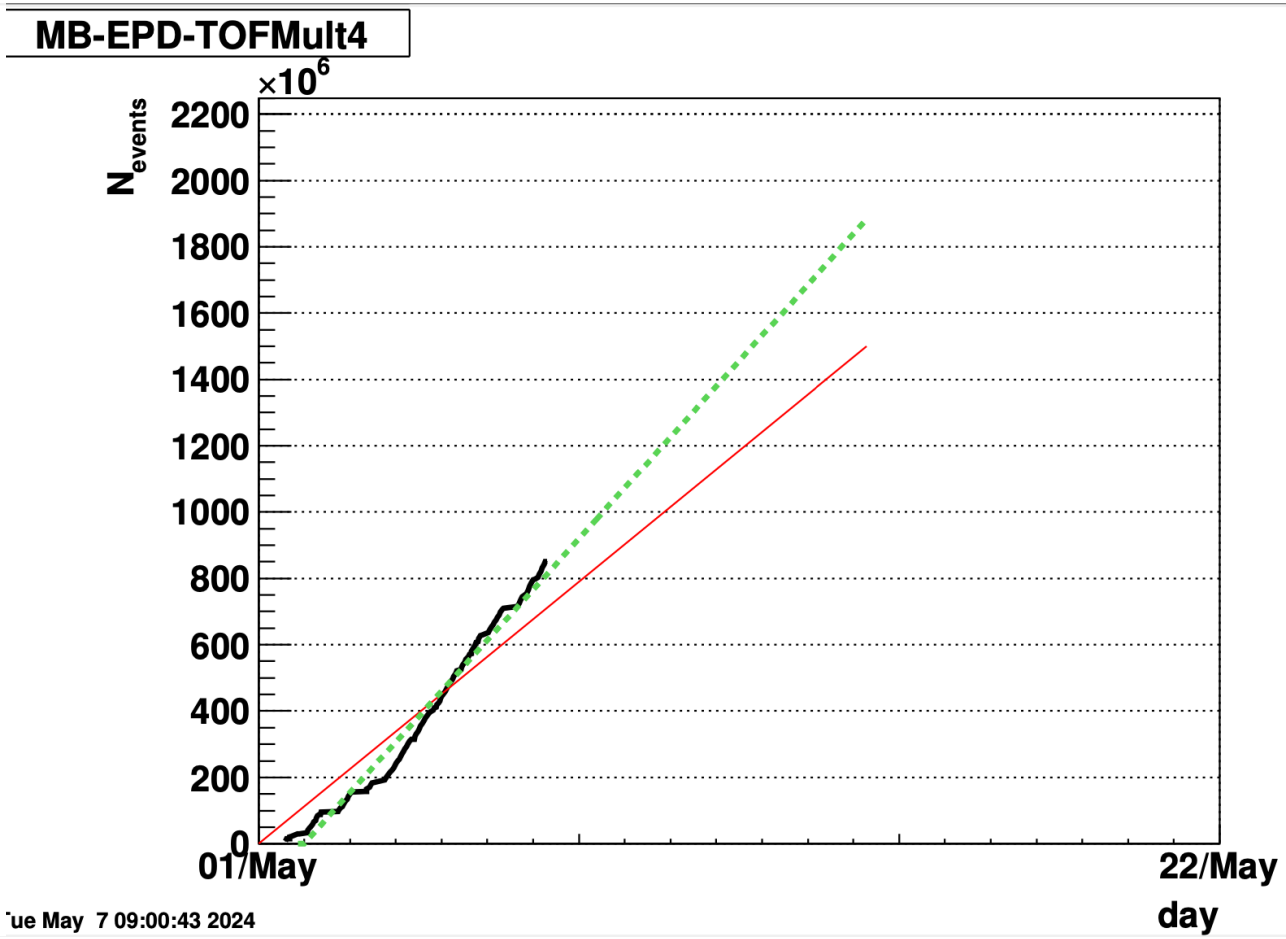
- 2000: 5 Hz
- 2003: 50Hz
- 2005: 100Hz
- 2009: 1000Hz
- 2015: 1500Hz
- 2020: 2000Hz
- 2022: 3000Hz
- 2023: 4000Hz
- 2024: 5800Hz

Low Luminosity Physics Goals

pp Minbias 1.5B evts goal



pp High Multiplicity 1.5B evts goal



Summary of past week and Plan

- Smooth data-taking
- Accumulate physics data
  1.7B physics evts
- On way to reach
  low luminosity goals
- Start to commission scalers and triggers for spin physics with high luminosity and polarization

Beam Use Request for Run24

$\sqrt{s_{NN}}$ (GeV)	Species	Number Events/ Sampled Luminosity	Year
200	p+p	142 pb^{-1}/12w	2024
200	p+Au	0.69 pb^{-1}/10.5w	2024
200	Au+Au	18B / 32.7 nb^{-1}/40w	2023+2025

Assuming 24 physics weeks / year