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Statistics discussion from last year's BUR

1 message

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Dear All

Since we will need to come up with a concrete plan in this year's BUR on how we will achieve our statistics goals, I think it would be helpful to review what was discussed last year and modify accordingly.

1) MB program

Assumed weeks: 14

ZDC rate: 50 kHz

DAQ rate: 4.7 kHz

Combined RHIC+STAR uptime: 50%

Number of events: 20 B

2) For rare probes, the estimation is based on Run16 performance, i.e. sampled 12.8 nb^{-1} without vertex cut in 11 weeks at ZDC rate $\sim 70 \text{ kHz}$.

14 weeks with 50 kHz: $12.8 * 14/11 * 50/70 * 102/111 = 10.7 \text{ nb}^{-1}$ (102/111 is due to cogging at sPHENIX)

34 weeks with 100kHz: $12.8 * 34/11 * 100/70 * 102/111 = 51.9 \text{ nb}^{-1}$

In total, we can sample 62.6 nb^{-1} in 2023+2025. If you have a vertex cut of 70 cm (30cm), please apply a factor of 0.9 (0.6) to the sampled luminosity.

Best

Rongrong