STAR Run24: Beam Request

- **Luminosity for pp**
  - BUR based on the latest CAD projection
  - Goal: 142 pb^{-1} sampled /12 weeks
    - Run15: 127 pb^{-1}/10.8 weeks, sampled/delivered luminosity~70%
- **Polarization**
  - Assume $\mathcal{P}$ = 60%
  - Radial (horizontal) polarization only (for pp and pAu)
    - to maximize FoM and minimize systematics for the physics measurements with Forward Upgrade
    - previous radial polarization: in Run17 during RHICf (6 days)
- **No crossing-angle for pp (and pAu)**
  - for maximum/optimal polarization and luminosity
- **No luminosity leveling for pp (and pAu)**
  - no min-bias dedicated data collection mode for pp (and pAu)
- **Order of Species (pp vs AuAu)**
  - no strong preference for STAR operation
  - support CAD's preference for best luminosity and polarization
- **No major items to be done during the Shutdown period**
  - planned to be ready for the beam (pp or AuAu) by Jan 8

Beam Use Request
(9/11/23 PAC meeting)

$\sqrt{s_{\mathrm{NN}}}$ (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

28 cryo-weeks for pp,pAu in Run24
28 cryo-weeks in Run25 and 6 additional cryo-weeks in Run24 for AuAu