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sPHENIX measurements of heavy flavor production in p+p collisions

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sPHENIX is the first new collider detector experiment dedicated to heavy-ion physics since the inception of the LHC. Successfully commissioned in 2023–2024, one of its standout features is a streaming-capable tracking system that enables the collection of large, unbiased p+p datasets—previously unattainable at the Relativistic Heavy Ion Collider (RHIC). Leveraging this capability, sPHENIX recorded over 100 billion unbiased p+p collisions at 200 GeV during Run-24. This unprecedented dataset unlocks a high-precision open heavy flavor physics program with extended low-pT reach, spanning both charm and beauty sectors. This poster presents progress in the analysis of open heavy flavor in the p+p dataset, where, from one hour of data and early-stage calibrations, we see observations of open-charm mesons and evidence of Lambda_c in p+p collisions at RHIC. These resonances will allow for novel physics measurements to be performed for the first time at RHIC.

Secondary track

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