The MPC-EX Upgrade to the PHENIX Forward Spectrometers

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The proposed MPC-EX detector is a Si-W preshower extension to PHENIX's existing Muon Piston Calorimeter (MPC). The MPC-EX consists of eight layers of alternating W absorber and Si mini-pad sensors. Located at large rapidities ($3.1 < \vert \eta \vert < 3.8$), the MPC-EX and MPC access low-x partons in the heavy nucleus in p+A collisions which makes possible a study of gluon distributions in cold nuclear matter via direct photon and neutral pion measurements. With the addition of the MPC-EX, the neutral pion reconstruction energy range extends to energies $>80$ GeV, a factor of four improvement over current capabilities. Not only will the MPC-EX strengthen PHENIX's existing forward $\pi^0$ measurements, but it will also allow for direct measurements of spin-dependent fragmentation in transversely polarized proton-proton collisions. In this presentation I will discuss the design of the MPC-EX detector and the potential impact on current and future measurements made at PHENIX.