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Towards a first look at forward neutral pions with PHENIX's MPC and MPC-EX detectors

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The MPC-EX detector is a Si-W preshower detector located in front of PHENIX's well-established Muon Piston Calorimeter. The combined energy measurement from these two detectors in concert with the improved position resolution and detailed early shower information provided by the MPC-EX expands PHENIX's neutral pion reconstruction capabilities in the rapidity range 3.1 < $|\eta|$ < 3.8 out to high energies, E < 80 GeV, a factor of four improvement over our current ability and close to the luminosity limit. Forward π^0 measurements in p+Au provide a signal to study nuclear shadowing, initial state energy loss and/or gluon saturation effects as a function of rapidity, centrality and energy. Furthermore, by looking at angular correlations between neutral pions and varying their rapidity and p_T, we can examine the flow-like ridge correlations with low p_T π^0s and selectively sample correlations from dijet events, extending down to an x of 10^{-3}, with high p_T π^0s. In 2015, the MPC-EX was installed in PHENIX and had its first data taking during in RHIC's $\sqrt{s_{NN}} = 200$ GeV transversely polarized p+p and p+Au collision running. The status of the analysis of this new data will be presented focusing on neutral pion reconstruction and related observables.

On behalf of collaboration:

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