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Underlying Event Studies at RHIC

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By studying p-p collisions we hope to improve our understanding of the fundamental constituents of matter and how they form into colorless objects. Measurements of the inclusive jet cross-sections and fragmentation properties have confirmed that QCD based calculations give a good description of the hard scattering processes. However, as our analysis of jets has improved it has become clear that there is significant contribution to these measurements from something other than the hard scattering - the so-called underlying event. Several processes contribute to the underlying event, namely the beam-beam remnants, and initial and final state radiation. The structure of the jet and the underlying event are strikingly different in both their particle compositions and momentum distributions. Only by understanding both components can we fully describe a p-p collision.

I will discuss preliminary results from studies of the underlying event in p-p collisions at sqrt(s) = 200 GeV at RHIC, and compare to PYTHIA predictions as well as earlier results from the Tevatron at 1.96 TeV.

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