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Multiplicity Fluctuations in Relativistic Heavy Ion Collisions

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Fluctuations in the multiplicity of particles produced in relativistic nuclear collisions influence many multi-particle correlation measurements. In each nuclear collision, the number of produced particles fluctuates because the number of particle sources fluctuates and the number of particles emerging from each source also fluctuates. Further, we expect that jet and thermal source models of particle production should produce different fluctuation patterns. We search for a method to categorize collision events by the regions of phase space that provide the largest contribution to multiplicity fluctuations. In particular we seek to develop a method for comparison of different collision systems including proton-proton, proton-nucleus, and nucleus-nucleus collisions.

Collaboration (if applicable)

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Primary author: Mrs CODY, Mary (Lawrence Technological University)

Co-authors: MOSCHELLI, George (Lawrence Technological University); Mr KOCH, Brendan (Lawrence Technological University); Mr KOCHEROVSKY, Mark (Lawrence Technological University)

Presenter: Mrs CODY, Mary (Lawrence Technological University)

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