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Centrality Determination and Study of Pileup Effects in Au+Au Collisions at $\sqrt{s_{NN}}$ = 3 GeV from STAR YU ZHANG, Lawrence Berkeley National Laboratory, STAR COLLABORATION — In fixed target heavy ion experiments, multiple collision events may pile up in a recorded event due to the finite thickness of the target. This imposes a serious challenge to the analysis of higher cumulants of proton multiplicity distributions. In this talk we will present the result of the collision centrality determination and the study of pileup effect in Au+Au collisions at $\sqrt{s_{NN}}$ = 3 GeV with the fixed-target mode (beam energy of 3.85 GeV/u) at STAR. We will utilize different sub-detectors to separate single and pileup events. The multiplicity distributions will be compared to MC Glauber model calculations for centrality determination and the remaining event pileup fraction can be evaluated. Furthermore, the influence of the pileup events on higher-order proton cumulants will be discussed using transport model calculations.

Yu Zhang
Lawrence Berkeley National Laboratory

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