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Procedure for event characterization in Pb-Pb collisions at 40AGeV in the NA49 experiment at CERN SPS

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The time evolution of the strongly interacting matter created in a heavy-ion collision depends on the initial geometry and the collision centrality. This makes important the experimental determination of the collision geometry. In this presentation a procedure for event classification and estimation of the geometrical parameters in inelastic Pb-Pb collisions at the beam energy of 40 AGeV recorded with the fixed target experiment NA49 at CERN SPS is discussed. In the NA49 experiment, event classes can be defined using measured multiplicity of particles in the Time Projection Chamber (TPC) or energy of spectators deposited in forward Veto or Ring calorimeters. Using the Monte-Carlo Glauber model, these event classes can be related to average values of the geometric quantities such as impact parameter or number of nucleon-nucleon collisions. The implementation of this procedure within a software framework of the future CBM experiment was adopted for event classification in the NA49 experiment. In the future, this procedure will be used for analysis of the new Pb-Pb data collected by the NA61/SHINE experiment and for comparison with the results previously obtained by STAR at RHIC and the NA49 at CERN SPS Collaborations.

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