

In Reaction Plane Hadrons Anti-Hadrons Production in Relativistic Heavy Ion Collisions on two common event generators: HIJING and Hydjet++

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Abstract: The study of hadrons production in heavy ion collisions provides the researcher with a valuable techniques to investigate the properties of quark gluon plasma (QGP).

The hadrons and anti-hadrons production in the reaction plane, at the relativistic heavy ion collisions are studied for the energy per nucleon available at RHIC-STAR experiment. In order to test the used models for the hadrons and the anti-hadrons production, two common event generators (**HIJING and Hydjet++**) will established on Monte Carlo techniques are discussed for hadron and anti-hadrons productions in reaction plane. We find that, hydjet++ is more realistic in comparing the results of simulation with those of the experimental data published by STAR-Collaboration.

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**Title: Higgs Production in Relativistic Heavy ion Collisions
Using Monte Carlo Techniques**

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Abstract: The yield of Higgs particles in Relativistic Heavy Ion Collisions is very low (~ 21 events in 10^9 events). The Simulations of these events are based on available theoretical models of elementary particle productions (like Standard Model (SM)) and the models concerning the medium of the quark gluon plasma, require a huge computational resources to produce a large number of events adequate to study the Higgs production. The available event generators based on the Monte Carlo Techniques, like PYTHIA8.180 and SCHERPA, are investigated in order to generate Higgs Hard Events. The toy event generator produces only events containing statistically weighted Higgs Bosons with a possibility of the experimental cuts on the produced particles have been developed. A comparison of the obtained results with the published experimental data are carried out to refine the toy model.