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Particles production in ATROPOS string fragmentation model

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The process of hadronization is usually seen as a universal process for all types of colliding particles and at all energies. A regular approach used in existing SoftQCD MC generators is to portray it as Lund quark-gluon string (QGS) fragmentation. However, results from both colliders and cosmic ray experiments indicate the need to transition to non-universal scheme of hadron production in order to describe the full set of data (the so-called Global Approach).

In this report I will present the first results of simulating multihadron production using ATROPOS MC generator. ATROPOS is a new hadronization model that implements the full potential of the Nambu-Goto string theory to derive the dynamics of the process of QGS fragmentation. An outstanding feature of the model is the consideration of the angular momentum of the QGS that allows one to break the universality of fragmentation by tuning the characteristic angular momentum of the string for different types of collision systems and at different energies to better reproduce the data.

The brief introduction into the basics of ATROPOS model is given. An importance of the angular momentum consideration for particle production is demonstrated. The results of simulating e^+e^-, pp and π^-C collisions are presented. The prospects of the new model are also discussed.

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