Self-similarity method in relativistic physics

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Particle production in nuclear collisions is quantitatively described using the self-similarity method. The method is based on the self-similarity description of production cross sections as functions of fractions of four-momenta of particles participating in the reaction. This allows one to describe a wide variety of reactions in a unified way. The validity of this description was proved using multiple experimental data. The future experiments at the LHEP accelerator complex on strangeness production are simulated using the self-similarity method in order to set up measurements in an optimal way. A wide range of types of colliding nuclei and energies from units to tens of GeV obtained using the bubble chambers is analyzed using the self-similarity method. Special attention is paid to cumulative processes with high transverse momenta and soft processes not related to collective effects in relativistic nuclear interactions.