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Anisotropic flow of charged hadrons in O+O collisions at $\sqrt{s}_{NN} = 6$ GeV in the UrQMD model.

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In heavy-ion collision, the global collectivity of final-state particles can be quantified by anisotropic flow coefficients (v_n). These coefficients carry information about the initial geometry of the system, the equation of state, and the expansion dynamics of strongly interacting matter. While v_n studies have mainly focused on the large collision systems at the energies relevant to the NICA program ($\sqrt{s}_{NN} = 4.5$ -11 GeV), light and intermediate-size systems remain largely unexplored in this energy domain. O+O collisions at low energies represent an intermediate-size system, needed to establish system-size dependence of v_n at high baryon density.

In this work, O+O collisions at $\sqrt{s}_{NN} = 6$ GeV are simulated using the UrQMD model to study the directed, elliptic and triangular flow of charged hadrons, which may help to establish the limits of hydrodynamic-like behavior as a function of system size, and serve as a reference for future experimental studies at NICA.

Primary author(s) : MOROZOV, Maxim; ALPATOV, Egor (NRNU MEPhI); POVAROV, Alexey (NRNU MEPhI); VASILIEVA, Anastasiia; Mr. LEVKOV, Anatoli

Presenter(s) : MOROZOV, Maxim

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