

Geometry and space-time extent of pion emission region at FCC energies

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The energy dependence is investigated for a wide set of space-time characteristics derived from Bose–Einstein correlations (BEC) of secondary pion pairs produced in proton-proton and nucleus-nucleus interactions. There is no sharp changing of femtoscopic parameter values at intermediate and high energies. Analytic functions suggested for smooth approximations of energy dependence of emission region parameters demonstrate reasonable agreement with most of experimental data at collision energies above 5 GeV. Estimations of some femtoscopic observables are obtained for energies of both the proton-proton and the nucleus-nucleus mode for the Future Circular Collider (FCC) project based on the smooth approximations. The space particle densities at freeze-out are derived also from estimations for volume of emission region and for total multiplicity at FCC energies.

Primary author: Prof. OKOROKOV, Vitalii (National Research Nuclear University MEPhI (RU))

Presenter: Prof. OKOROKOV, Vitalii (National Research Nuclear University MEPhI (RU))

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