

Time scale of the thermal multifragmentation in C(22 GeV) + Au collisions

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The relative angle correlation of intermediate mass fragments has been studied for C(22 GeV) + Au collisions at the Dubna Nuclotron with the FASA [1] 4pi detector array. Strong suppression at small angles is observed caused by IMF-IMF Coulomb repulsion. Experimental correlation function is compared to that obtained by the multibody Coulomb trajectory calculations with the various decay time of fragmenting system. The analysis has been done on an event by event basis. The multibody Coulomb trajectory calculations of all charged particles have been performed starting with the initial breakup conditions given by the combined model INC [2] + SMM [3]. The correlation function was calculated (using HybriLIT platform of LIT, JINR) for prompt breakup and for mean life time of the system 200 fm/c at freeze-out volume $V_f = 3V_0$.

It was found a good agreement of measured and calculated correlation function for prompt breakup which is in accordance with the scenario of a simultaneous multibody decay of a hot and expanded nuclear system. The research was supported by Grant No. 19-02-00499A from Russian Foundation for Basic Research.

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