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## Effect of grey particles multiplicity on cluster size in 4.5GeV $^{12}\text{C}$ -nucleus collisions

### Content :

Analysis of the experimental data obtained in 4.5 GeV  $^{12}\text{C}$ -nucleus reactions reveal that the maximum number of relativistic charged particles constituting a cluster is four. The results also reveal that the cluster size is not only independent of the nature and energy of the projectile but also does not depend on the multiplicity of grey particles and hence on the number of encounters made by the projectile inside the nucleus. On comparing the finding of the present work with those obtained by other workers at the same projectile energy and using the same projectile, it is observed that our findings are in marked disagreement with those obtained by these workers. Finally, it is also observed that behavior of uncorrelated production in 4.5 GeV  $^{12}\text{C}$ -nucleus interactions may be reproduced quite well by Wigner distribution, which is one of the nearest neighbor of Gaussian-Orthogonal Ensemble distribution.

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