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Nuclear Experiment

Clustering in relativistic dissociation of ^{9}be, ^{9}c, ^{10}c and ^{12}n nuclei

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(Submitted on 9 Jun 2011)

The dissociation features in nuclear track emulsion of ^{9}Be, ^{9,10}C, and ^{12}N nuclei of 1.2 A GeV energy are presented. The data presented for the nucleus ^{9}Be can be considered as evidence that there is a core in its structure in the form of 0$^+$ and 2$^+$ states of the ^{8}Be nucleus having roughly equal weights. Events of coherent dissociation ^{9}C$\rightarrow 3^3$He associated with the rearrangement of the nucleons outside the α-clustering are identified. A pattern of the charge fragment topology in the dissociation of ^{10}C and ^{12}N nuclei is obtained for the first time. Contribution of the unbound nucleus decays to the cascade process ^{10}C$\rightarrow ^9$B$\rightarrow ^8$Be is identified.

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