

FURTHER STUDY ON GREY PARTICLES PRODUCTION IN ^3He AND ^4He INTERACTIONS WITH EMULSION AT 4.5A GeV/c

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Experimental results of two helium isotopes at the same incident momentum reveal several trends belonging to grey particles productions. Hence, the interactions of 4.5A GeV/c ^3He and ^4He with emulsion nuclei are presented and analyzed. The dependence of the grey particle production in the forward hemisphere (FHS) and backward hemisphere (BHS) (which is restricted beyond the kinematic limits) on projectile and target sizes is studied. The average grey particles multiplicity can be correlated with the target size A_T and the parameter Q which represents the interaction centrality. The experimental data are examined in the framework of the modified cascade model. The study can provide a possibility to explain production mechanism at high energy.

Keywords: *Helium Interactions with Emulsion, Grey Particle Production, Modified Cascade Model.*