

Charged particle formation in the reaction of stopped pion absorption by light nuclei

Friday, 14 October 2016 13:35 (20)

The results of the investigation on spectra and yields of hydrogenium and helium isotopes formed in the reaction of the stopped pion absorption by atomic nuclei are presented. The study is based on the unique data on charged particle formation following pion absorption on 17 target nuclei in the mass range $6 < A < 209$. The experiment was conducted on the PNPI synchrocyclotron using the semiconductor spectrometer [1].

In the works [2,3] we proposed a model that allowed us to satisfactorily reproduce spectra and yields of the charged particles (p, d, t, 3,4He) formed in the pion absorption on medium and heavy nuclei. In the present work our model is modified in order to take into account cluster structures of absorbing nuclei. The approach allowed to reproduce the data on yields of the charged particles on the light nuclei 6,7Li, 9Be, 10,11B, 12C with 20% precision and to estimate the contributions of the absorption on the intranuclear clusters pp, 3,4He.

The reported study was funded by RFBR according to the research project No. 16-32-00734

Primary author(s) : Mr. PRITULA, Roman (MEPhI)

Co-author(s) : Dr. CHERNYSHEV, Boris (National Research Nuclear University MEPhI); Mrs. KOROTKOVA, Larisa (National Research Nuclear University MEPhI); Mr. LAPUSHKIN, Sergei (NRNU "MEPhI"); LEONOVA, Tatiana (NRNU MEPhI); Mr. KARPUKHIN, Vasili (NRNU "MEPhI"); Dr. GUROV, Yuri (NRNU "MEPhI")

Presenter(s) : Mr. PRITULA, Roman (MEPhI)

Session Classification : Nuclear physics and particle physics - parallel IX

Track Classification : Nuclear physics and particle physics