Nuclear Theory

Pion productions by proton and Helium-3 on Au197 target at beam energies of 2.8, 5, 10 and 16.587 GeV/nucleon

Gao-Chan Yong, Xurong Chen, Hu-Shan Xu, Wei Zuo

(Submitted on 30 Jun 2011 (v1), last revised 28 Dec 2011 (this version, v2))

Based on a Relativistic Boltzmann-Uehling- Uhlenbeck transport model, proton and ^{3}He induced reactions on ^{197}Au target at beam energies of 2.8, 5, 10 and 16.587 GeV/nucleon are studied. It is found that compared with proton induced reactions, ^{3}He induced reactions give larger cross sections of pion production, about 5 times those of the proton induced reactions. And more importantly, pion production from ^{3}He induced reaction is more inclined to low-angle emission. Neutrino production via positively charged pion is also discussed accordingly.

Comments:	5 pages, 11 figures, one figure(fig9) was added to show the scaling behavior of pion production, AMPT calculations were discussed, accepted by PRC
Subjects:	**Nuclear Theory (nucl-th)**; High Energy Physics - Experiment (hep-ex); High Energy Physics - Phenomenology (hep-ph); Nuclear Experiment (nucl-ex)
Journal reference:	Physical Review C 85, 024911 (2012)
DOI:	10.1103/PhysRevC.85.024911
Cite as:	**arXiv:1106.6108 [nucl-th]**
	(or **arXiv:1106.6108v2 [nucl-th]** for this version)

Submission history

From: Gao-Chan Yong [view email]

[v1] Thu, 30 Jun 2011 02:43:12 GMT (461kb)

[v2] Wed, 28 Dec 2011 03:27:47 GMT (460kb)

Which authors of this paper are endorsers?