



Contribution ID: 84

Type: Oral presentation

LIGHT FRAGMENTS FROM (C + Be) INTERACTIONS AT 0.6 GeV/nucleon

Thursday, 25 June 2015 16:00 (20 minutes)

Click here to download the template: <https://agenda.infn.it/materialDisplay.py?materialId=2&confId=5235>

The 12th International Conference on Nucleus-Nucleus Collisions, June 21-26, 2015, Catania, Italy

LIGHT FRAGMENTS FROM (C + Be) INTERACTIONS
AT 0.6 GeV/nucleon

B.M. Abramov, P.N. Alexeev, Yu.A. Borodin, S.A. Bulychjov, I.A. Dukhovskoy, A.P. Krutenkova, V.V. Kulikov,
M.A. Martemianov, M.A. Matsyuk, E.N. Turdakina, A.I. Khanov
Institute for Theoretical and Experimental Physics SRC KI, 117218 Moscow, Russia

S.G.Mashnik
Los Alamos National Laboratory, Los Alamos, NM, USA

Momentum distributions of hydrogen and helium isotopes from ^{12}C fragmentation on a Be target were measured at 3.50 in the FRAGM experiment [1] at the ITEP TWA heavy ion accelerator. The fragments were selected by correlated time of flight and dE/dx measurements with a magnetic spectrometer with scintillation counters. The main attention was drawn to the high momentum region where the fragment velocity exceeds the velocity of the projectile nucleus. At energy 0.6 GeV/nucleon the momentum spectra of fragments span the region of the fragmentation peak as well as the cumulative region. The differential cross sections cover three-six orders of magnitude depending on the fragment. The shapes of the momentum spectra are compared to the predictions of four ion-ion interaction models: INCL++, LAQGSM03.03, QMD and BC. The kinetic energy spectra of the fragments in the projectile rest frame are fitted with the sum of two exponents with different slope parameters. The temperatures of the source extracted from the slope parameters are 5-8 MeV for a soft component and 15-30 MeV for a hard component. For each fragment the temperatures are compared with the predictions of the above mentioned models as well as with those measured at 1 GeV/nucleon in Au+Au interactions [2]. A dependence of these temperatures on the fragment type is discussed.

[1] B.M.Abramov et al. JETP Lett. 97,439 (2013); Kulikov et al. POS(Baldin ISHEPP XXII) 079 (2015)

[2] T. Odeh et al. Phys. Rev. Lett. 84, 4557 (2000).

Primary author: Dr KRUTENKOVA, Anna (ITEP, Moscow, Russia)

Presenters: Dr KRUTENKOVA, Anna (ITEP, Moscow, Russia); Dr ZARUBIN, Pavel (Joint Institute for Nuclear Research, Dubna, Russia)

Session Classification: Relativistic Heavy-Ion Collisions

Track Classification: Relativistic Heavy-Ion Collisions