



Contribution ID: 15

Type: Oral

The interface of BLOB with GEANT4

Wednesday 24 April 2019 10:40 (30 minutes)

Despite of its large use, the models implemented in Geant4 have shown severe limitations in reproducing the measured secondary yields in ions interaction below 100 MeV/n, in term of production rates, angular and energy distributions.

For this reason, we coupled BLOB (Boltzmann-Langevin One Body), a models dedicated to simulate such interactions, with Geant4 and its de-excitation phase.

BLOB is a semi-classical one-body approaches to solve the Boltzmann-Langevin equation. It includes a treatment of the mean-field propagation, on the basis of an effective interaction. BLOB introduces fluctuations in full phase space through a collision term where nucleon-nucleon correlations are explicitly involved. BLOB has been developed to simulate heavy ion interactions in the Fermi-energy regime.

We will present the preliminary results obtained in calculating double-differential cross sections and angular distributions of the secondary fragments produced in the ^{12}C fragmentation at 62 MeV/n on thin carbon target obtained with this model coupled with Geant4 and its de-excitation phase.

Authors: MANCINI TERRACCIANO, Carlo (Sapienza Universita e INFN, Roma I (IT)); Dr CACCIA, Barbara (Istituto Superiore di Sanità); CIRRONE, Pablo (Unknown); DOTTI, Andrea (SLAC National Accelerator Laboratory (US)); NAPOLITANI, Paolo (Ganil); PANDOLA, Luciano (INFN-LNS); COLONNA, Maria (INFN - National Institute for Nuclear Physics)

Presenter: MANCINI TERRACCIANO, Carlo (Sapienza Universita e INFN, Roma I (IT))

Session Classification: Nuclear reactions at low and intermediate energies

Track Classification: Nuclear reactions at low and intermediate energies