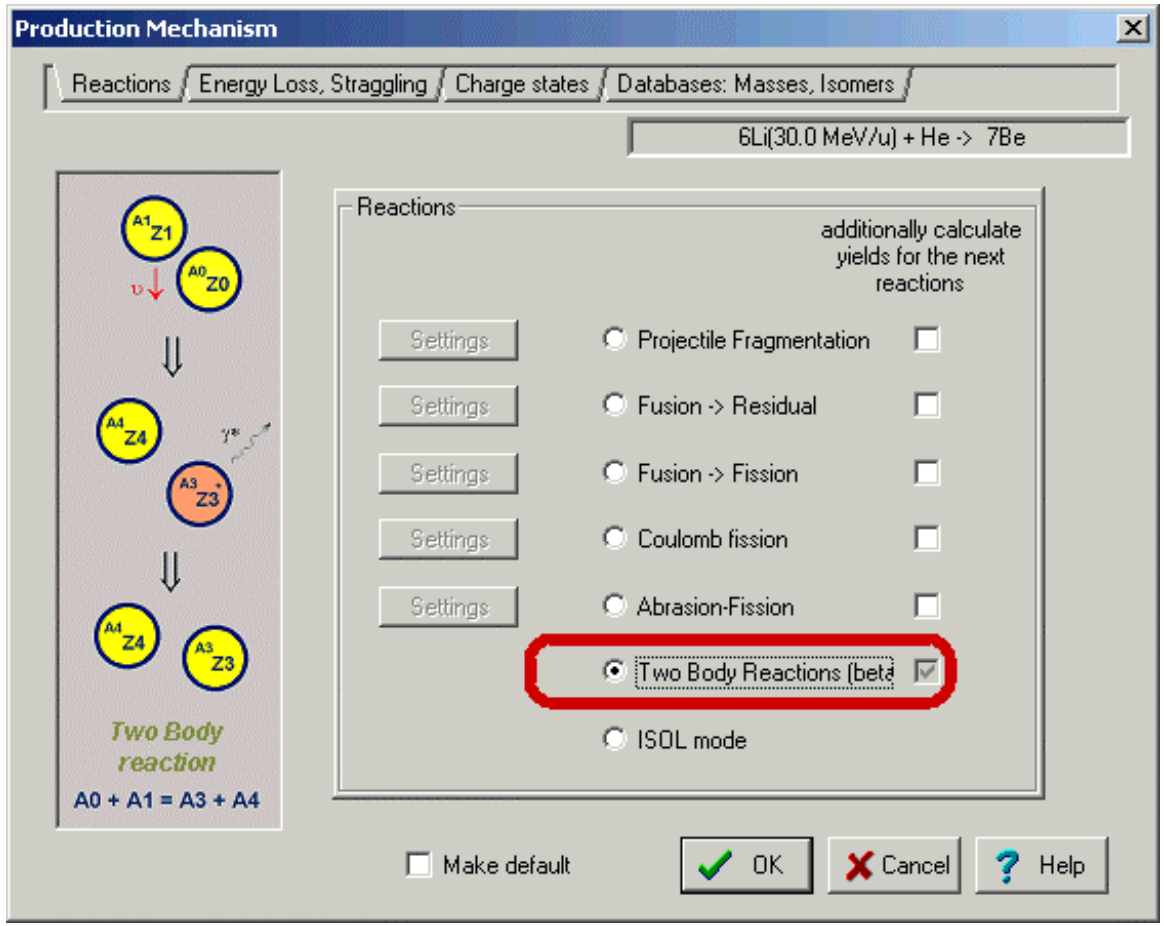
Two body reactions

Version 8.0.14

The Two Body kinematics calculation has been implemented using the kinematic code developed for fission reactions for the analytical method (”Distribution”) transmission calculation, as well as the new LISE Monte Carlo (v.7.9) method. The following assumptions used:

- **the distribution of fragments is isotropic in the center mass system;**
- **the fragments are produced in their ground state;**
- **the cross sections are taken from EPAX by default, but is highly recommended to input realistic cross sections manually.**

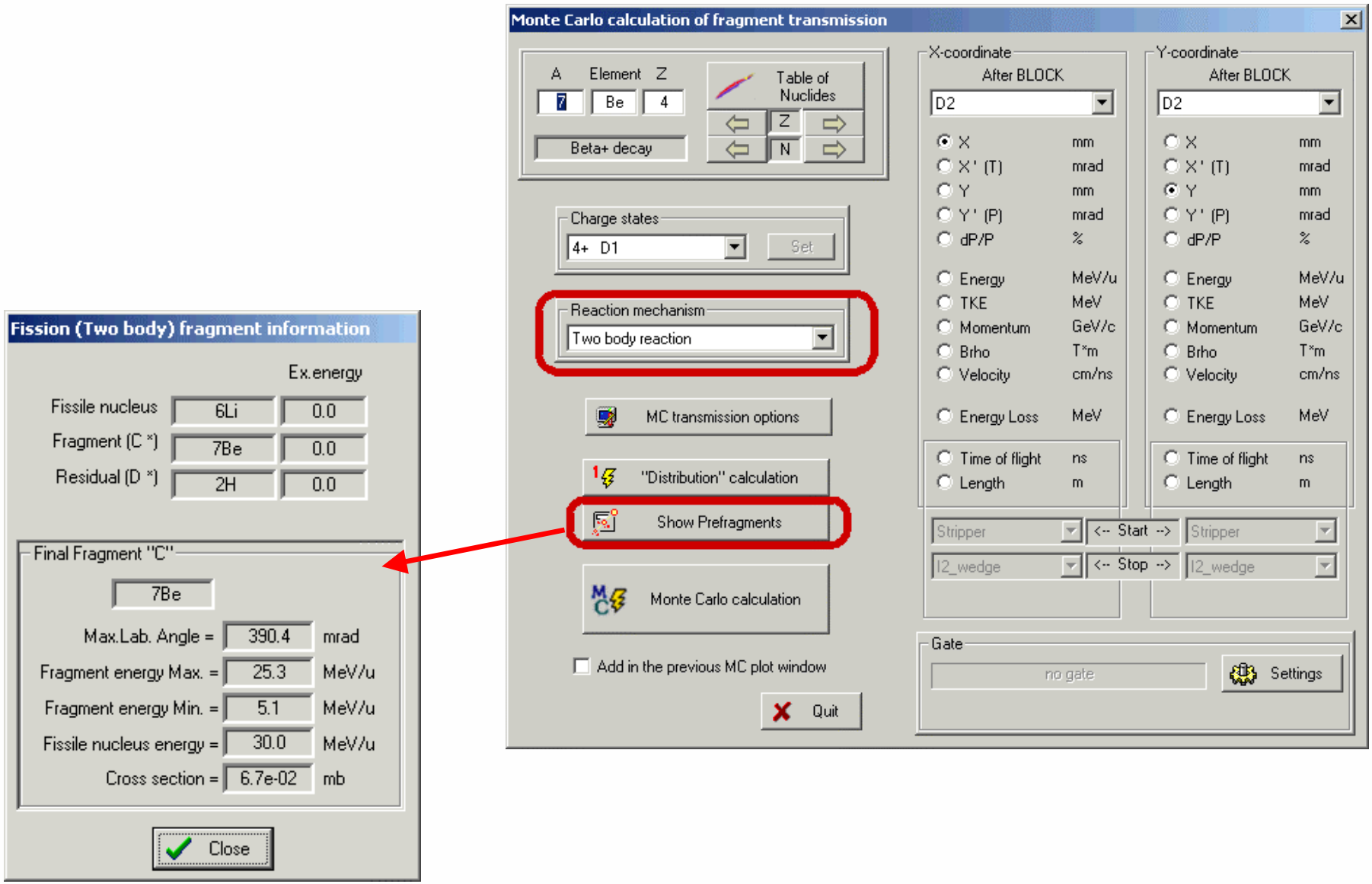


The code operates under MS Windows environment and provides a highly user-friendly interface. It can be freely downloaded from the following internet addresses:

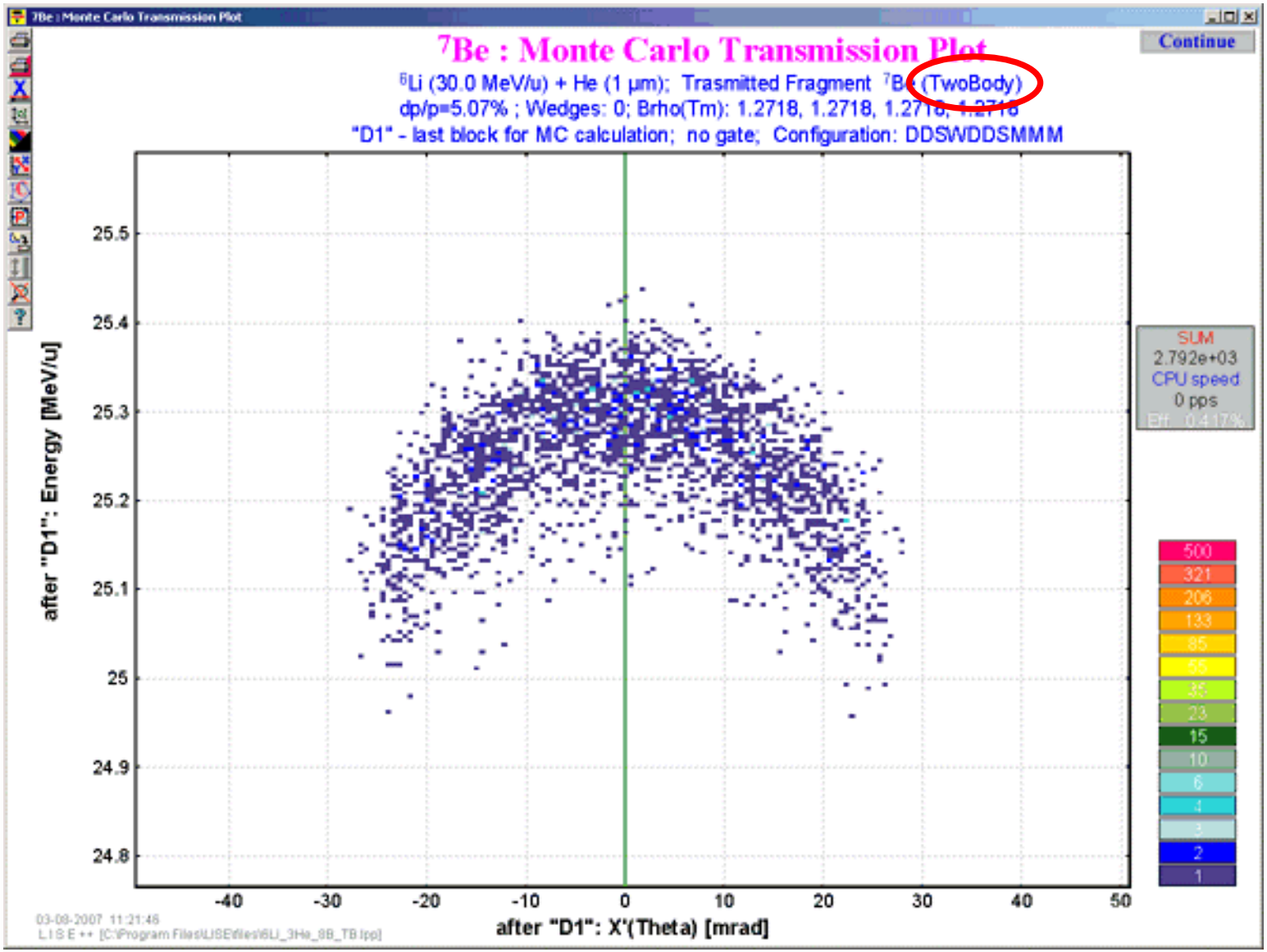
http://www.nscl.msu/edu/lise

http://dnr080.jinr.ru/lise

Monte Carlo calculation of fragment transmission



Monte Carlo calculation of fragment transmission



Comparison of Analytical and MC methods

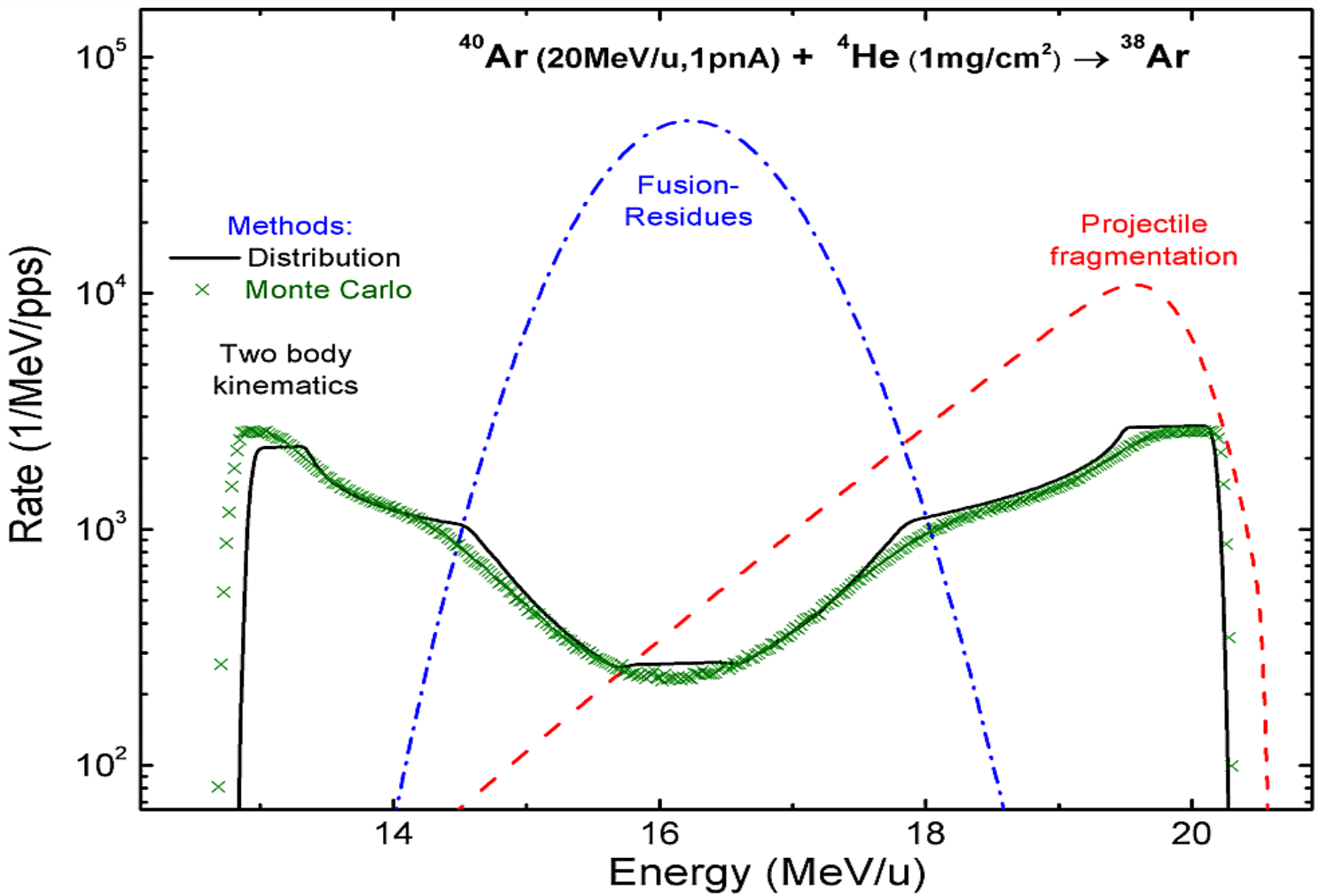


Figure. Energy spectra calculated by the "Distribution" method of ^{38}Ar fragments produced by different reaction mechanisms, using an ^{40}Ar beam at 20 MeV/u on a ^{4}He target (1 mg/cm^2) and gated by a rectangular angular acceptance X' = ±100mrad, Y' = ±60mrad.

The Monte Carlo calculation of the energy spectrum of 38Ar fragment produced in two body reaction is also shown. The default LISE++ production cross sections EPAX 2.15 and LisFus model were used to estimate the rates.