

DOUBLE DIFFERENTIAL CROSS SECTION OF FRAGMENT PRODUCTION BY TEN'S OF MEV PROTON AND NEUTRON

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Double differential cross section (DDX) of fragment production from a neutron-induced reaction is one of important parameter to estimate neutron dose and irradiation effects of medium due to the large LET (linear energy transfer) despite of the lesser production rate. We have developed a Bragg curve spectrometer (BCS) suitable to DDXs measurements for fragment emission reactions by neutron and proton in ten's of MeV region. The measurements are performed at AVF cyclotron facility in TIARA, NIRS and CYRIC, Japan. Fragments from 70 MeV proton induced reaction on C, Al and Si are measured at 30, 60, 90 and 135 deg. Fragments from C are measured at 0 deg for 65 MeV quasi mono-energetic neutrons. These experimental data are compared with the results of PHITS code using several INC models. The comparisons show systematic trend concerning the difference between experiments and calculations.