

Nuclear data study for Accelerator Driven System at J-PARC

In order to decrease the toxic waste produced at the nuclear reactor, a study of the Accelerator Driven System (ADS) is going around the world. Since the neutron production target at ADS is designed to be irradiated by protons in the kinetic energy of several GeV, a study with the high-energy particles in the kinetic energy region around GeV is essential for the research and development of ADS. However, many accelerator facilities using several GeV-protons, which were built 1970's, are going to shut down due to their lifetime. Eventually, the facilities to be able to use protons with several GeV are scarce in the world. In Japan, J-PARC can only apply for the sake of ADS using the hadron including proton. At the 3-GeV proton synchrotron (RCS) facility and the beam transport line, some studies are going at J-PARC aimed for nuclear data of ADS.

In this session, some results of the experiment related to nuclear data for ADS are introduced, such as nuclide production cross-section induced by proton and displacement cross-section.

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