Human Resources

M. BABA

Cyclotron and Radioisotope Center, Tohoku University
Aramaki, Aoba-ku, Sendai 980-8578, Japan

The nuclear data is a fundamental data base for nuclear technology and science. It has played a crucial role in the course of nuclear energy development of fission reactors and fusion reactors, and will be so also in the future. Nowadays, the data requirement is extending over various fields such as astrophysics and space technology etc.

The characteristic and important point of "nuclear data" is that it should provide "complete data set" covering all the items required e.g., cross sections, physical quantities like fission yield etc, in consistent manner with accuracy as high as achievable. The accuracy required is very high, e.g., the accuracy required for fission cross section and number of prompt fission neutron of 235U is as high as 1 % or higher.

Such high performance of nuclear data has been achieved and maintained through well-organized collaboration among experiment/ measurement, evaluation and compilation. In addition, in Japan, many benchmark analyses were undertaken by reactor physicist/engineer and they contributed greatly to quality assurance of the data.

Recently, however, reduction of manpower and budget for nuclear data work is becoming a serious problem over the world. One reason will be "perfection" of nuclear data which means the present data files have reached to "satisfactory level" in completeness and accuracy so long as the data for traditional fields is concerned. Nevertheless, nuclear data requirement is extending to "exotic fields" like high energy region, higher actinides, basic fields and medical fields and so on.

To meet such wide requirement and keep the activity of nuclear data society, good human resource and the organization will be key issues. In addition to specialists who are well acquainted with "nuclear data" (evaluation, processing and treatment), collaboration with peoples in nuclear physics, particle physics, and other related fields will be essential for the evaluation of "exotic nuclear data" employing new models and theories developed in the physics fields. For the reason, an appropriate way is highly required to promote the collaboration with physics people in particular young people.   Universities in the nuclear engineering field will be expected to provide specialists through education and encouragement to students in the nuclear physics and engineering which are the bases of nuclear data activities.