

Nuclear Data Evaluation and Applications

The compilation and evaluation of nuclear structure and decay data is being carried out by the network of Nuclear Structure and Decay Data (NSDD) Evaluators- an international network established under the auspice of International Atomic Energy Agency (IAEA), Austria. India became a member of this network in 2005 with the establishment of Nuclear Data Center at Indian Institute of Technology, Roorkee and further these NSDD evaluation activities in India have received a boost with the formation of Nuclear Data Physics Centre of India (NDPCI).

Experimentally measured nuclear structure and decay data for all known nuclei are presented in the ENSDF database [1] after due evaluation by trained and experienced evaluators in this field. This database a primary source for many specialized data bases such as Nubase, MIRD, RIPL, JAINS, RADWARE and for some important publications such as Nuclear Data Sheets, Table of Isotopes, Nuclear Wallet Cards etc.

There are many situations where the evaluation process has led to removal of contradictions in data and also led to new studies and measurements [2-5]. It is gratuitous to emphasize that the planning of any new experiment in nuclear physics invariably uses the ENSDF database.

Indian nuclear data centre is responsible for evaluation and updation of total 15 mass chains pertaining to $A=215-229$ mass region. In this presentation, I will discuss about organization of Evaluated Nuclear Structure Data Files (ENSDFs), NSDD evaluation activities being executed in India along with our contributions towards horizontal evaluations [6] and development of ENSDF analysis and utility codes [7] for NSDD evaluation.

REFERENCES

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Primary author: Dr DHINDSA, Sukhjeet Singh (Akal University Talwandi Sabo, Punjab)

Presenter: Dr DHINDSA, Sukhjeet Singh (Akal University Talwandi Sabo, Punjab)

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