

Joint ICTP-IAEA Workshop on Nuclear Structure and Decay Data: experiment, theory and evaluation

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10th Joint ICTP-IAEA Workshop on Nuclear Structure and Decay Data: Experiment, Theory and Evaluation, 3 – 14 October 2022, Trieste



Lecturers:

Navin Alahari (GANIL, France) - remote
Xavier Mougeot (LHNB-Saclay, France)
Silvia Lenzi (U. Padova-INFN, Italy)
Dario Vretenar (U. Zagreb, Croatia)

NSDD evaluators:

Shamsuzzoha Basunia (LBNL, USA)
Jun Chen (FRIB/MSU, USA)
Tibor Kibedi (ANU, Australia) - remote
Filip Kondev (ANL, USA)
Elizabeth A. McCutchan (BNL, USA) (DIR) - remote
Gopal Mukherjee (VECC, India)
Balraj Singh (McMaster U., Canada) - remote

IAEA:

Paraskevi (Vivian) Dimitriou (DIR)
Marco Verpelli

Joint ICTP-IAEA Workshop on Nuclear Structure and Decay Data: Experiment, Theory and Evaluation



3 - 14 October 2022
Trieste, Italy

Further information:
<http://indico.ictp.it/event/9930/>
ms27@ictp.it

The workshop offers an Introduction to evaluated nuclear structure and decay data, by providing an overview of experimental and theoretical nuclear techniques and basic hands-on training in the evaluation procedures employed to produce the Evaluated Nuclear Structure Data File (ENSDF).

Directors:

S. DAMENICA, IAEA, Austria
E.A. MCCUTCHAN, Brookhaven National Laboratory, USA

Description:

Includes evaluated nuclear structure and decay data of vital importance for basic nuclear physics and astrophysics, as well as for applications in the fields of energy, cultural heritage, environment, human health and space exploration. The academic requirements for nuclear structure and decay data are collected by the International Network of Nuclear Structure and Decay Data (INNDD), Evaluation, an international group of evaluators created in 1974 under the auspices of the IAEA. The main output of this network is the online ENSDF database and publications in Nuclear Data sheets.

This workshop belongs to a series of ICTP workshops that started in 2005. It has been instrumental in attracting young nuclear scientists to nuclear structure and decay data evaluation and providing them with the basic tools to pursue this activity.

Topics:

- Nuclear experimental techniques
- Nuclear structure theory
- ENSDF compilation
- ENSDF evaluation methodology, procedures and formats
- Analysis and utility codes
- Editor and Web tools
- Database and online released software

Call for Papers:

A session will be held for participants to present their own research related to nuclear structure and decay data.

Local Organiser:

RAJ KASHI, IAEA

How to apply:

Online application:
<http://indico.ictp.it/event/9930/>

Remote scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Deadline:

30 June 2022



Scientific Programme

Lectures

- experimental techniques Alahari, Mougeot
- nuclear theory Vretenar, Mougeot
- shell model Lenzi
- evaluation methodology and policies Kondev, Kibedi, Basunia, Chen
- averaging methods Basunia
- Codes Kondev, Kibedi, Chen, Mougeot
- Databases - dissemination Verpelli, McCutchan, Dimitriou

Week 1: Exercises

- Data retrieval (Live Chart), Marco Verpelli
- Codes (Kondev)
- MyEnsdf Webtools (Dimitriou)

XUNDL compilation

- Coordinator: Balraj Singh (presentation)
- Split in groups of 2: 6 groups + 1 alone
- Compilation of 7 papers
- Group supervisors: Filip Kondev, Gopal Mukherjee, Vivian Dimitriou

Week 2

ENSDF evaluation

- Coordinator: Balraj Singh
- A=222:
 - Jun Chen: Ra-222, (6 students)
 - Shamsu Basunia: Rn-222 (5 students)
 - Vivian Dimitriou: Th-222 (2 students)
- Draft updates of three nuclides already prepared by Balraj Singh
- Students could either check these updates or do their own updating and compare with Balraj
- Each group had almost finalized one data set
- 8 nuclei in A=222 with ground-state properties information only updated by Balraj Singh

Workshop material



- Manuals and guidelines
- Codes
- Lectures from previous workshops
- XUNDL papers
- Mass chain $A=222$ material (prepared by Balraj Singh)

Students/participants

- Total: 13
- Female=54% Male=46%
- Countries: India=8, France=2, Jordan=1, S. Africa=1, USA=1

Questionnaire



- Feedback from participants on
 - Organizational aspects
 - Scientific program, lectures, exercises
- Conclusions:
 - XUNDL+ENSDF in 2 weeks is ok; would prefer more time to do ENSDF
 - Codes should be introduced in hands-on sessions with exercises
 - 2-week duration is preferred
 - ENSDF is preferred to XUNDL

Financial aspects



- Budget: 25K Euros + 5K from IAEA = 30K
- Students/participants costs: ~14.5K Euros
- Lecturer costs: 13K Euros
- Ratio Students/Lecturers costs not optimal – not sustainable

ICTP 2022

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IAEA

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Atoms for Peace and Development

Thank you!

