



Horia Hulubei National Institute for R&D  
in Physics and Nuclear Engineering

# Evaluation activities of the Bucharest NSDD Centre

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# 01

## Current situation

1. EF Compton

Atom incident

electron de recul

Foton împrăștiat

2. EF fotoelectric

Atom

Foton

3. Gamma pozitron

$e^+$  (pozitron) 511 keV

$e^-$  (electron) 511 keV

Foton - cantitate de lumina care se comporta ca o particula, dar nu are masa de repaus.

Energy fotoniului - direct proporț cu frecvența și invers proporț cu lungimea de undă ( $E = h\nu$ )

interacțiune	$\sim 10^{24}$
electroni	$\sim 10^{25}$
interacțiune	$\sim 10^{30}$

Tipuri de dez.

- Des  $\bar{p}$  - un neutron în curs de neclintire în emiteră unii  $e^-$  și un antineutrino
- Des  $p^+$  (emisia de neutr)

$\rightarrow 1.022$

# Manpower

- In general: 0.4 FTE: Sorin Pascu + Alexandru Negret
- Temporary situation: reduced manpower caused by other obligations of both evaluators
- Looking for possibilities to increase contribution



# Responsibilities of the Bucharest Data Centre

Mass	Last published evaluation	Responsible evaluator	Status
57	NDS 85, 415 (1998)	A. Negret	Under evaluation by A. Negret, B. Singh and R. Firestone
58	NDS 111, 897 (2010)		
59	NDS 151, 1 (2018)		
117	NDS 95, 679 (2002) - updated 2009	S. Pascu	
118	NDS 75, 99 (1995)		Under evaluation by S. Pascu, A. Negret, and E. McCutchan
119	NDS 110, 2945 (2009)		



# Evaluation activities

- A=130: by S. Pascu, B. Singh, A. Rodionov, G. Shulyak - post review
- A=101: by J. Timar, Z. Elekes, A. Negret, S. Pascu - ~~final stage, to be submitted~~ with the reviewer
- CTBTO project (IAEA):
  - A. Negret: decay of  $^{133}\text{I}$  - ~~submitted for review~~ review received, updated version to be submitted very soon
  - S. Pascu: decay of  $^{140}\text{La}$  - ~~work in progress~~ submitted for review



# 02

## Plans for near future



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# Plans for the future

## Obligations within the European project SANDA

- A=101 - ~~finalize evaluation, submit,~~ perform the post-review corrections
- A=86 - evaluate a few nuclei, including  $^{86}\text{Sr}$  (together with B. Singh)
- CTBTO project:
  - A. Negret: decay of  $^{133}\text{I}$  - ~~perform the post-review corrections~~ resubmit after review
  - S. Pascu: decay of  $^{140}\text{La}$  - ~~finalize the evaluation~~ perform post-review corrections

## Other future plans

- Finalize the post-review corrections for A=57 and 130 together with B. Singh
- Work on A=118 together with E. Ricard-McCutchan





# 03

## The SANDA Project



# The H2020 project SANDA (Supplying Accurate Nuclear Data for Energy and Non-energy Applications)

- Funded by: European Commission, under the Horizon2020 program,
- Duration: 01. Sept. 2019 - 01. Sept. 2023 (an extension will be required caused by the COVID pandemic),
- Maximum EU contribution: 4.66 Meuro,
- Funding for ENSDF evaluation: ~20 kEuro/Data Centre, or 5 PM/Data Centre,
- Number of partners: 35 European institutes/universities,
- Work packages:
  - WP1: Detector development
  - WP2: Nuclear data measurements for energy and non-energy applications
  - WP3: Target preparation
  - WP4: Nuclear data evaluation
    - Task 4.2.2 Evaluation of nuclear structure and decay data
  - WP5: Data validation, integral measurements
  - WP6: Management, coordination, education, training
- Notes: First time when ENSDF evaluation is financially supported at the European level. Inclusion into the ND community is essential for the participation to future similar projects.



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# Thanks

Do you have any questions?

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