



NDLab

virtual experiments with nuclear data

A Python toolkit enabling the use of AI algorithms

The Arena of the game:

Structure & Decay data

$^{135}_{54}\text{Xe}_{81}$ $3/2+$ 0.0 $9.14 \text{ h } 2$

Q^+ 1165 keV 4

$B^- : 100.0 \% 0 \rightarrow$ $^{135}_{55}\text{Cs}_{80}$

I%	Log ft	#	Jp	En [keV]
0.123	5.71	5		1062.420
0.075	6.71	4		981.315

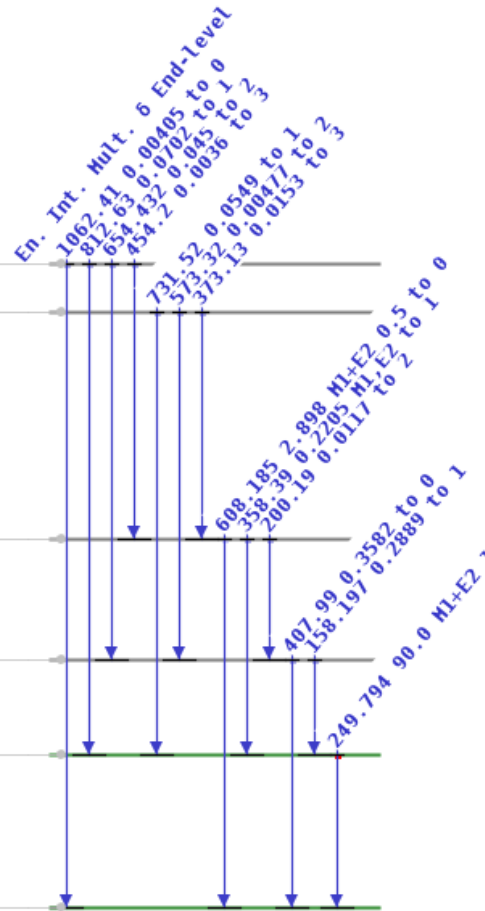
3.11 6.67 3 5/2+ 608.186

0.59 7.86 2 407.989

96 5.94 1 5/2+ 249.793

0 7/2+ 0.0

$^{135}_{55}\text{Cs}_{80}$ $2.3E+6 \text{ Y } 3$



Increasing interest in machine readable data



[NucML](#)

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OVERVIEW

- What is NucML?

GET STARTED

- Installation Guide
- Basic Walkthrough

NAVIGATING THE NDE

- Loading Data
- Exploratory Data Analysis
- Modeling Data
- Processing Data for Monte Carlo

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NucML is a python toolbox to aid the ML-enhanced Nuclear Data Evaluation pipeline.

OVERVIEW

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The issue I want to address:

*“We don’t have better algorithms,
we just have more data”*



Peter Norvig

Google, Director of Research

A data **model** that

mirrors the language
of nuclear physics

can seamlessly interact
with data analysis tools



An HTML version of the tutorial is available at

[ndlab-tutorial \(iaea-nds.github.io\)](https://iaea-nds.github.io)

DNLab documentation is available at

<https://iaea-nds.github.io/ndlab/>

DNLab is available at

[NDLab \(github.com\)](https://github.com)