New web interface for evaluated B(E2; 0^+ -> 2^+) data

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Project Motivation

- B(E2) Data Evaluation & Compilation Continuity
- Web Access
- Integration with Nuclear Science References (NSR)
- Utilization of my expertise in this subject

Starting Point

Database content is originally based on work of S. Raman, C.W. Nestor and P. Tikkanen "*Transition Probability from the Ground to the First-Excited 2+ State of Even-Even Nuclides*", Atomic Data and Nuclear DataTables, **78**, Number 1, May 2001, 1.

B(E2) Database Schema

Adopted

nucleus	varchar(128)
charge	int
.....	.....
be2	varchar(256)
comment 1	varchar(256)

Experimental

nucleus	varchar(128)
charge	int
.....	.....
be2	varchar(256)
comment3	varchar(256)

Authors

reference	varchar(128)
number	int
.....	.....
journal	varchar(256)
comment2	varchar(256)

Predicted

nucleus	varchar(128)
charge	int
.....	.....
be2	varchar(256)
comment4	varchar(256)

B(E2) Application Functionality

- Four major database functions: select, insert, update and delete
- Integration with Nuclear Science References

http://www.nndc.bnl.gov/be2

Next Step

- 2006 Start B(E2) experimental data compilation
- Expand scope of compilation to all nuclei, not just even-even
- Include B(Eλ) from T. Kibedi
- 2008 Produce B(E2) evaluation for

  $0^+ \rightarrow 2^+$ transitions in even-even nuclei

Future Nuclear Structure Help

- Create a simple ββ-decay Web application that will help ENSDF evaluators
- Explain the difference between ββ(oν) and ββ(2ν) decay modes
- Set priority for ββ(2ν) decay mode evaluation
- List best experimental results and limits
- Clarify difficult cases: ^{76}Ge ββ(0ν) results
- Integrate experimental papers with NSR