

NNDC Perspectives on a particle database

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Goals (NNDC perspective)

- **Develop particle/material properties format to support reaction databases**
- **Keep in mind needs of Nuclear Structure (ENSDF) evaluators**; if done properly, modest extension of format could accommodate their needs
- We will need to support web dissemination using Java web apps. **OOP design & class hierarchy important for us.**
- **Find spots for decay and atomic_relax sub libraries in ENDF**
- **All of RIPL not needed, just level schemes & decays. Level densities might prove helpful for checking resonance data**

Incomplete list of other things needed for ENSDF

■ ENSDF dataset top level markup

- ENSDF sets contain several subsets of the level scheme as found in a specific experiment
- An extra set comprises a “recommended” set, assembled from the partial level schemes

■ Data set cross references

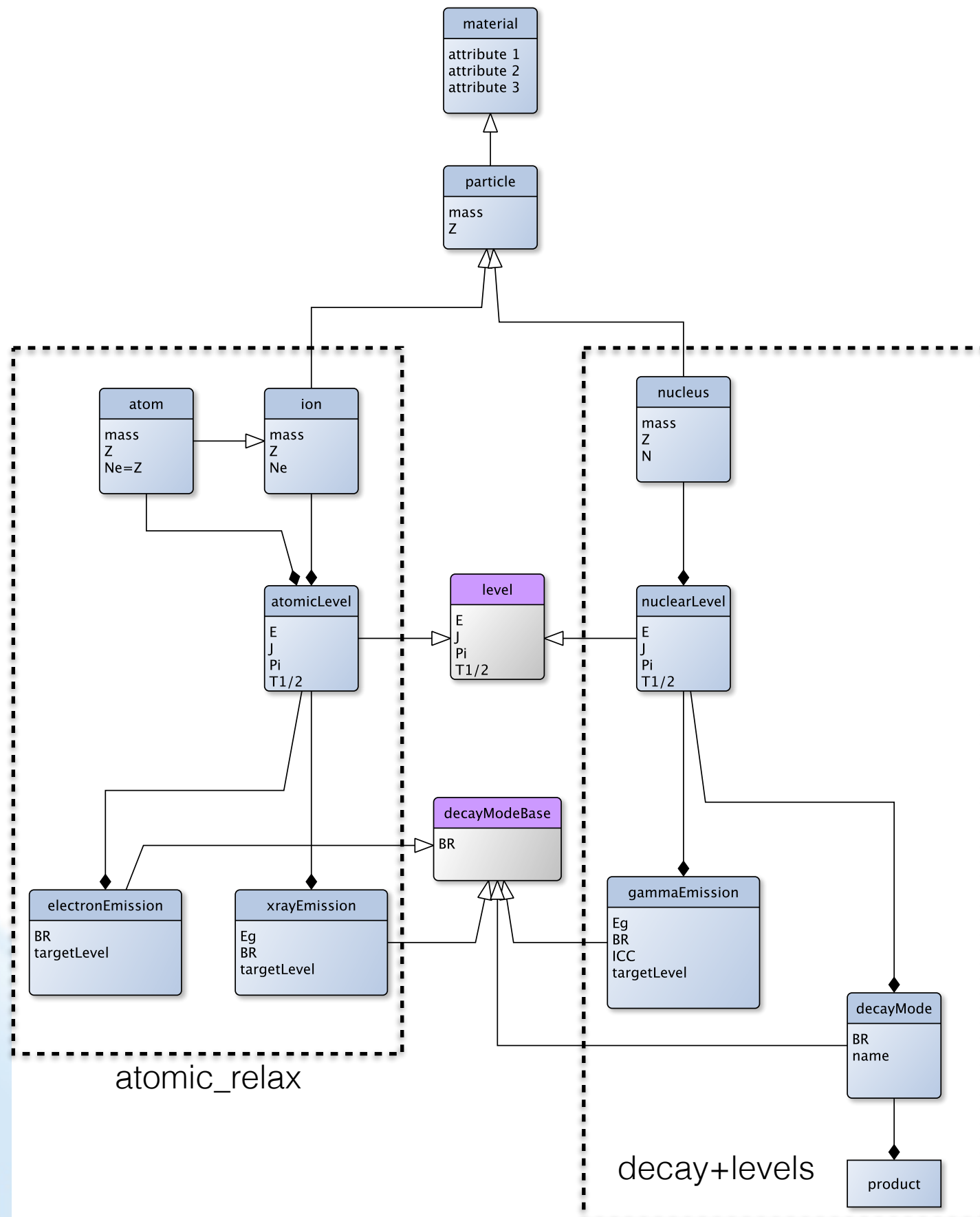
- Data in recommended set are cross references with the different subsets; each level cross references with the experiment that observes the level

■ Bibliographic information is much more extensive

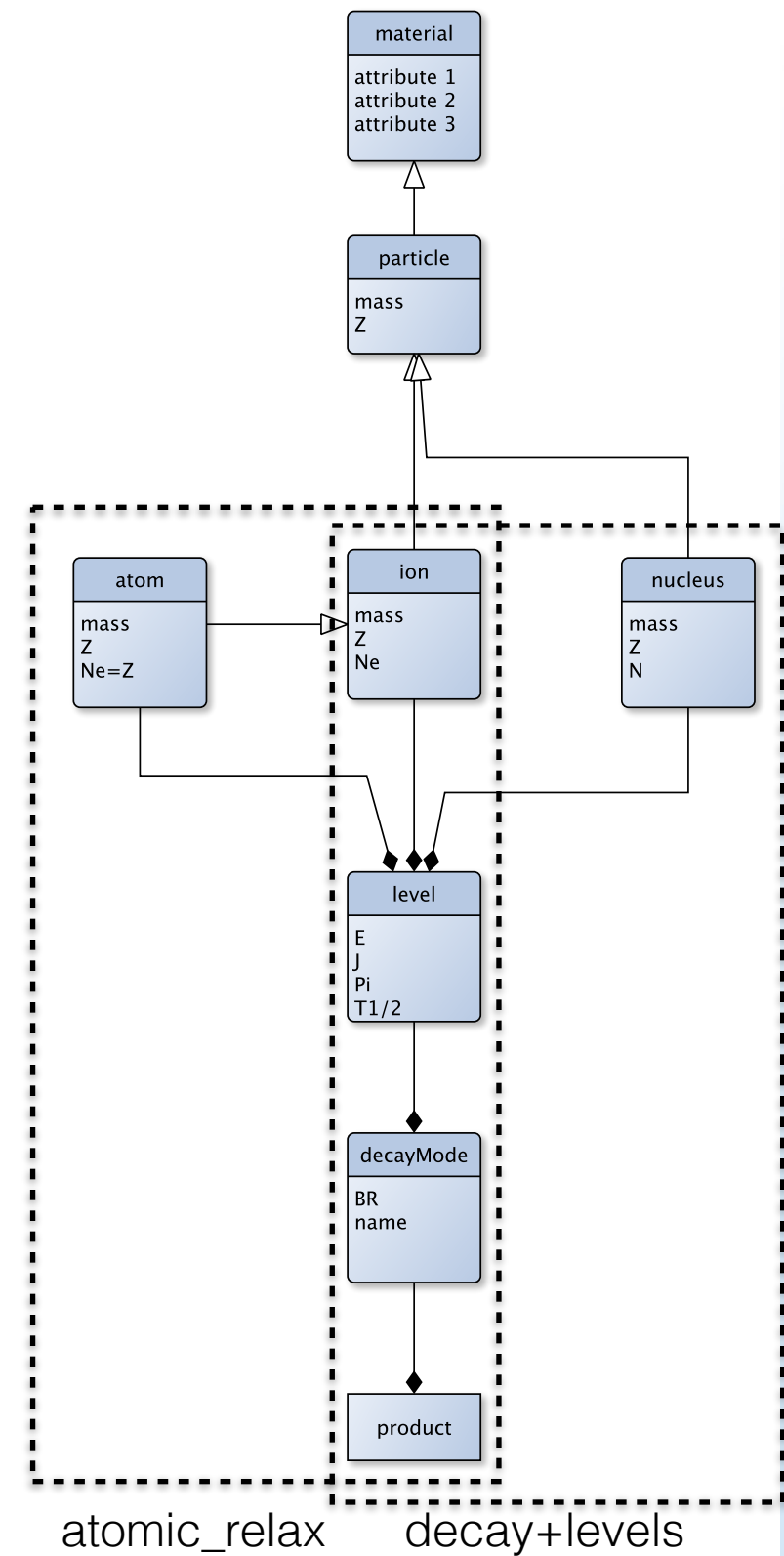
■ Uncertainties on discrete values

- J^π possibilities given as range of values

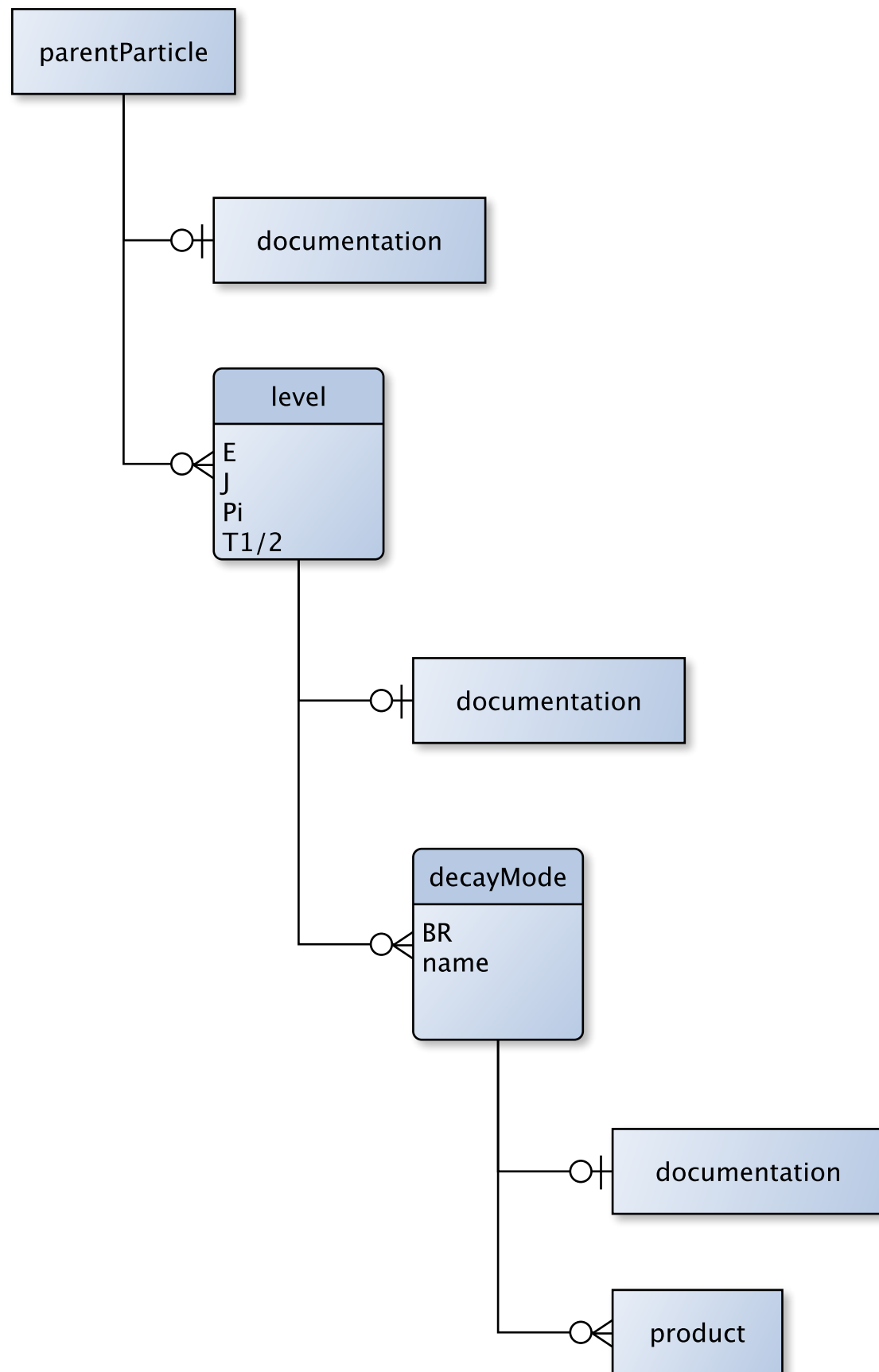
Explicit decay mode class structure



Unified decay mode class structure

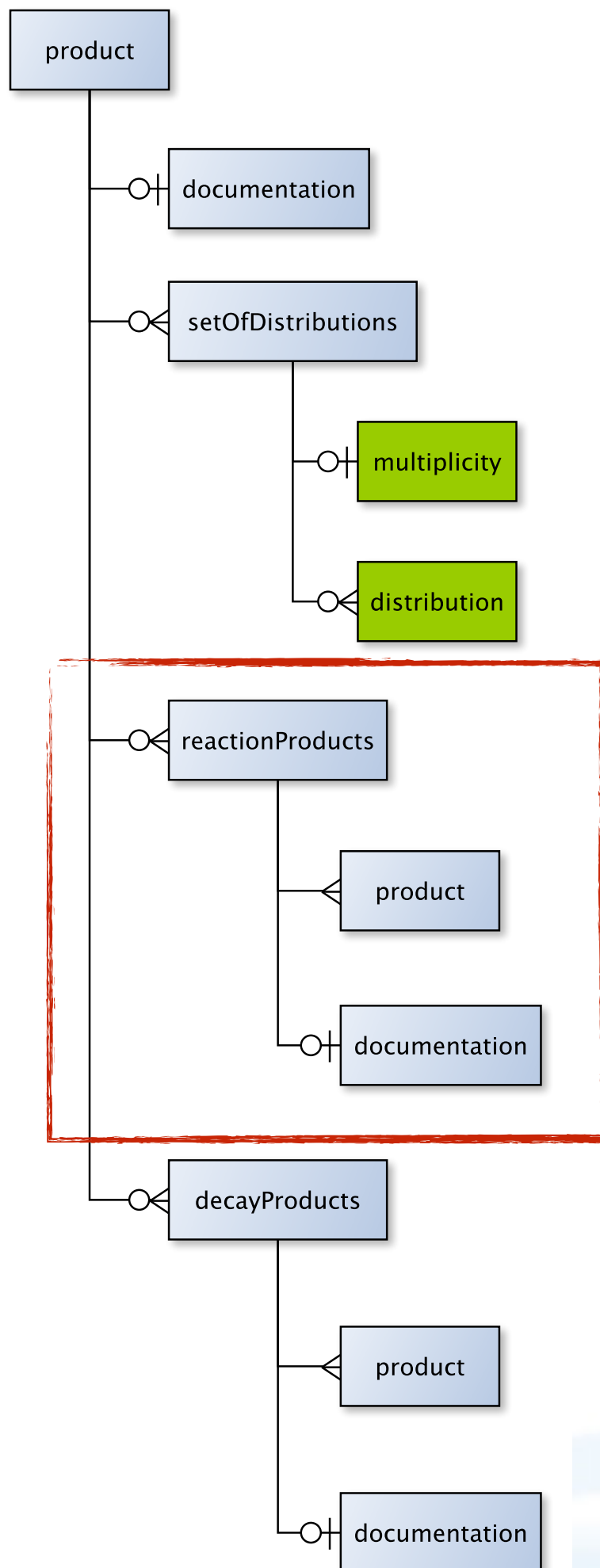


Unified decay mode hierarchy



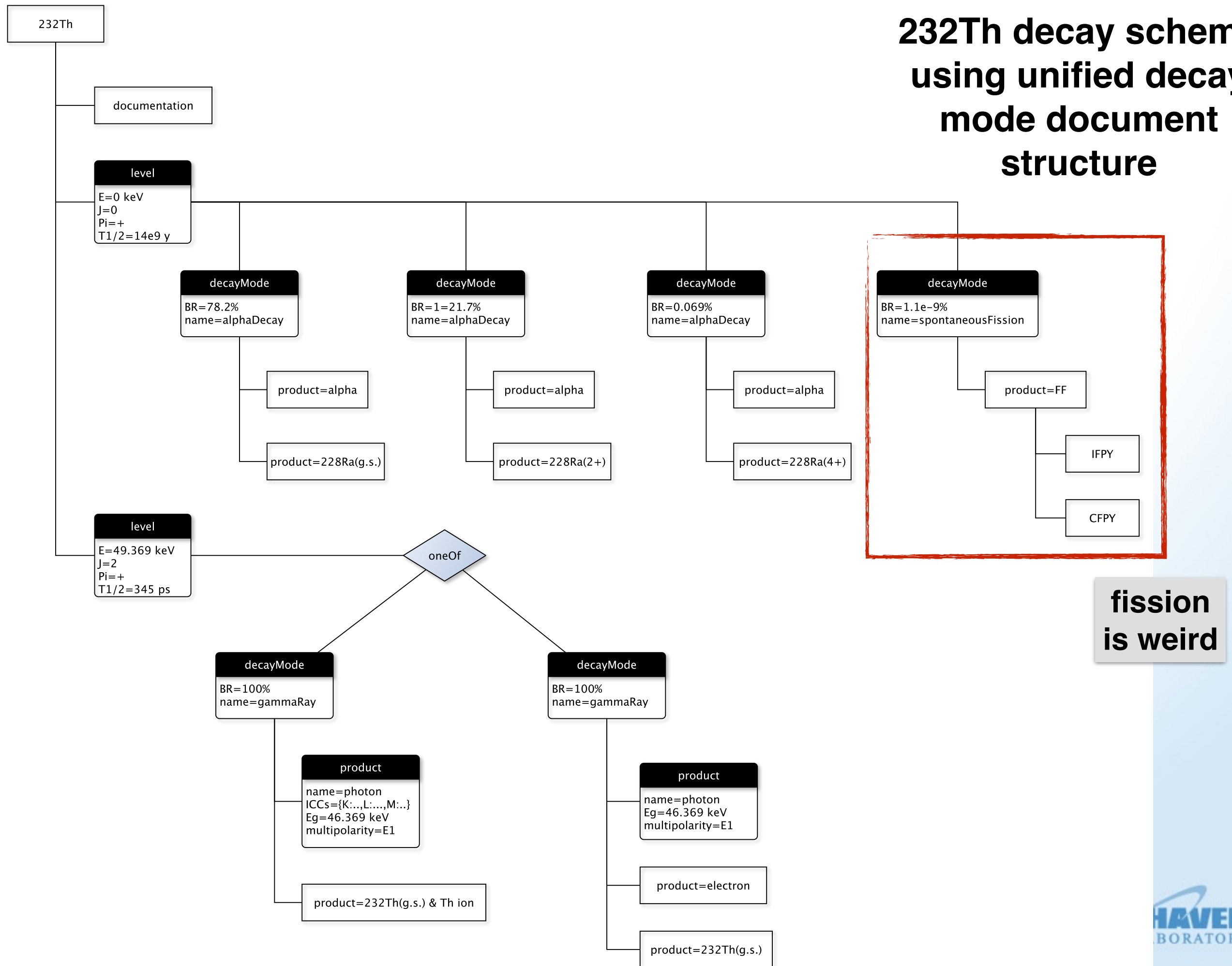
**Aim for a common
scheme, independent
of whether
parentParticle is
nucleus, atom or ion**

<product> element holds everything about a product

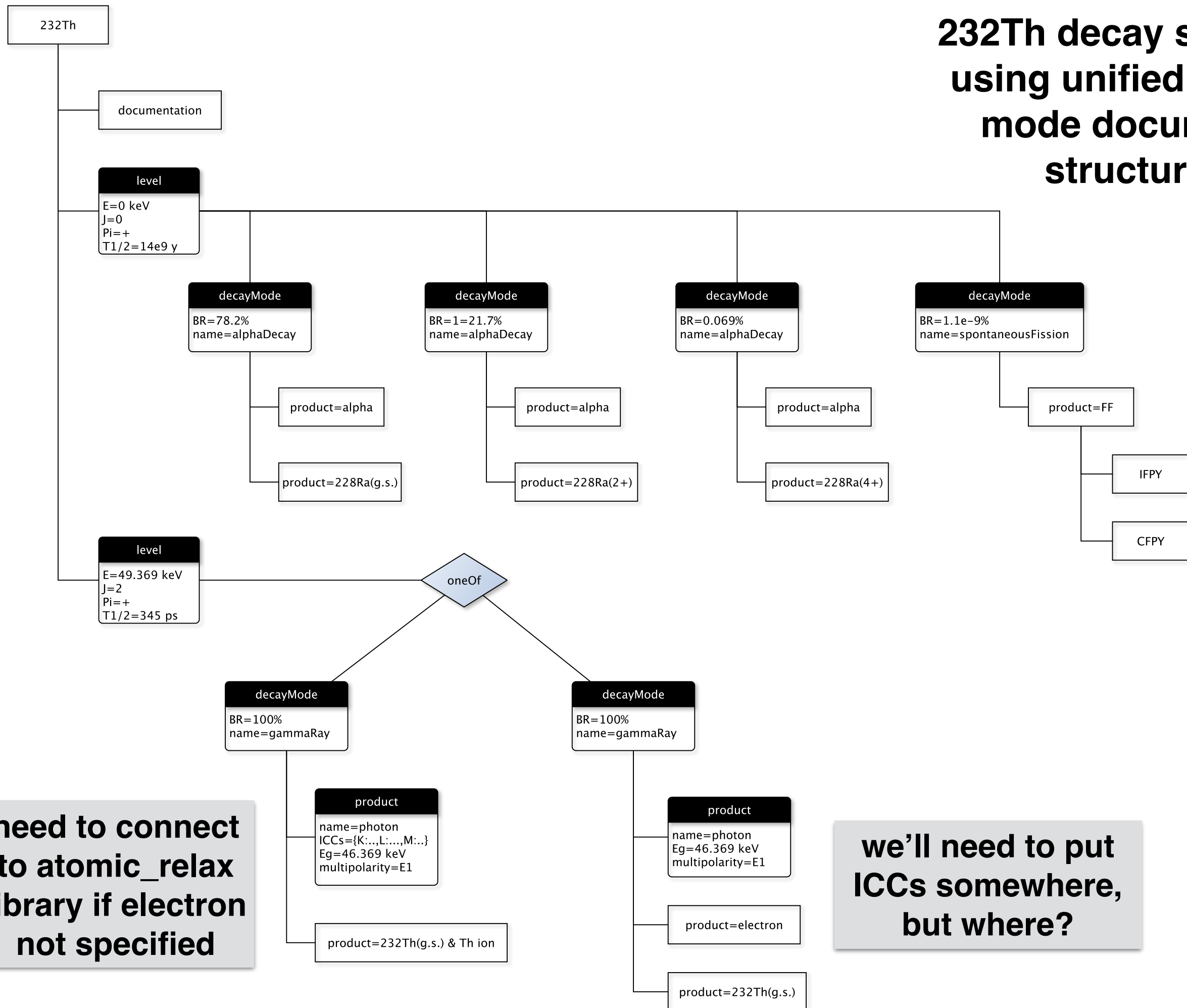


not used for particle
properties data

232Th decay scheme using unified decay mode document structure



232Th decay scheme using unified decay mode document structure



need to connect
to atomic_relax
library if electron
not specified

we'll need to put
ICCs somewhere,
but where?