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Fission session

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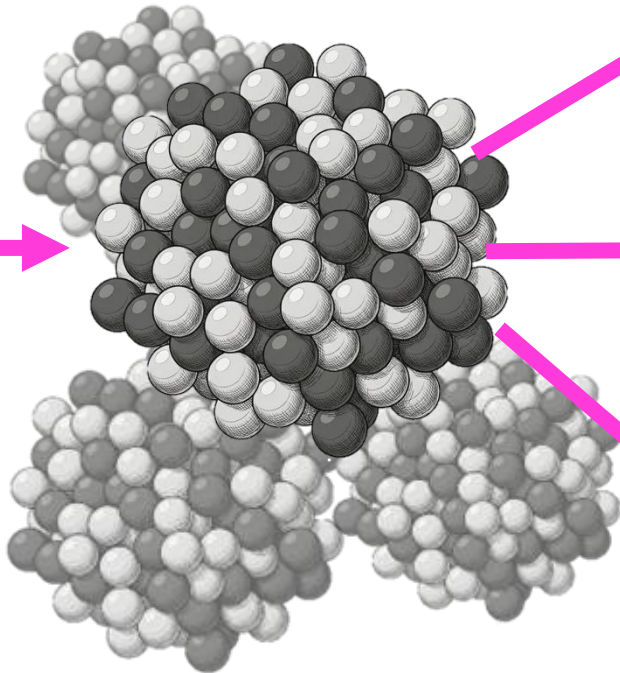


Data model for fission (in this session)

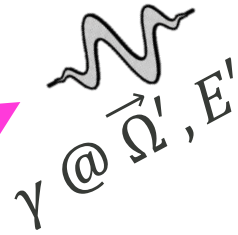
How likely is nuclide i to fission?

$$\sigma_{f,i}(E, T) N_i(t)$$

$n @ \vec{\Omega}, E$



$N_i(t)$ Nuclide i at time t



$n @ \vec{\Omega}', E'$



$N_{j'}$

$$\gamma_{f,i}(\vec{\Omega} \rightarrow \vec{\Omega}', E \rightarrow E')$$

What is the distribution of emitted **photons**?

$$n_{f,i}(\vec{\Omega} \rightarrow \vec{\Omega}', E \rightarrow E')$$

What is the distribution of emitted **neutrons**?

$$Y_{f,i \rightarrow j}(E)$$

What is the distribution of “emitted” **nuclides**?

including
uncertainty
+
correlations

Goal of the fission session

To discuss and record, as of February 2026, what are the new evaluations we want to appear in ENDF/B-IX for:

1. Fission cross section $\sigma_{f,i}(E, T)$
2. Continuous-in-energy fission product yields $Y_{f,i \rightarrow j}(E)$
3. Emitted photon/neutron angle and energy distributions $\gamma_{f,i}(\vec{\Omega} \rightarrow \vec{\Omega}', E \rightarrow E')$
 $n_{f,i}(\vec{\Omega} \rightarrow \vec{\Omega}', E \rightarrow E')$

Can we (start to) characterize level of effort to deploy high priority fission data in ENDF/B-IX?

Representation of uncertainty + correlations must respect

- Conservation laws
- Consistency within data set, e.g.
 - Independent FPY and cumulative FPY are linked through decay data
 - $\bar{\nu} = \nu_p + \nu_d$ where delayed neutrons ν_d are from FPYs

Covariances alone **do not** produce physical realizations of the data!