Fast Region Total and Capture Uncertainty Templates

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Measurement uncertainty templates

- Putting the templates together was a good exercise in finding the minimum information needed to understand the uncertainties and correlations
- The general metadata:
  - Reference (author, journal, etc.)
  - Facility, neutron source
  - Detector types, numbers
  - Sample level of enrichment, physical form
  - Monitor reaction, ratio measurement, etc.
  - Uncertainty analysis method
  - Corrections

Mono-energetic and TOF Total Cross Section

- Cross section vs energy, uncertainties
- Energy resolution
- Statistical uncertainties (counts and background)
- Background (correlated) uncertainties
  - In-scattering, room return, other
- Target number density, impurities
- Flux normalization value, method

Capture by Activation Analysis

- Cross section vs energy, uncertainties
- Energy resolution
- Statistical uncertainties (counts and background)
- Background (correlated) uncertainties, method
- Target number density, impurities
- Flux normalization value, method
- Detector efficiency, geometry correction
- Fit method and uncertainties
- Multiple scattering correction

Capture by Partial Gamma Measurement

- Cross section vs energy, uncertainties
- Energy resolution
- Statistical uncertainties (counts and background)
- Background (correlated) uncertainties, method
- Target number density, impurities
- Flux normalization value, method
- Detector efficiency, geometry correction
- Cascade modeling method, uncertainties
- Multiple scattering correction
- Deadtime correction (if needed)

Capture by Accelerated Mass Spectrometry

- Cross section vs energy, uncertainties
- Energy resolution
- Statistical uncertainties (counts and background)
- Background (correlated) uncertainties, method
- Target number density, impurities
- Flux normalization value, method
- Current uncertainty
- AMS “reproducibility” method and uncertainty

Fast Region specific issues

- Focus here is total and capture
- Issues that came up that are going to be problems (difficult to compile):
  - Multiple scattering corrections
  - Others?