



November, 2025 | CSEWG

AMPX 2025

PRESENTED BY

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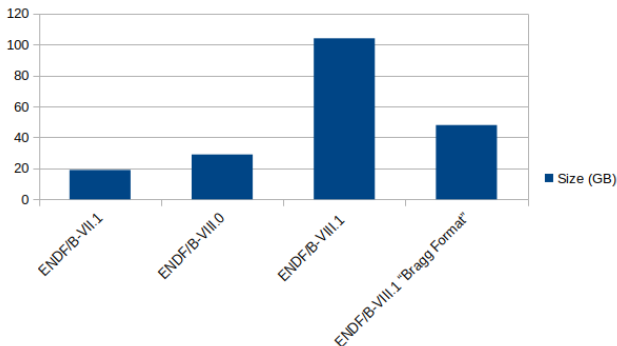


Outline

- AMPX development highlights
 - Efforts to streamline library production
 - Looking ahead
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- **Co-Authors:** J. Brown, C. W. Chapman, BK Jeon, K. S. Kim, D. Wiarda

AMPX development highlights

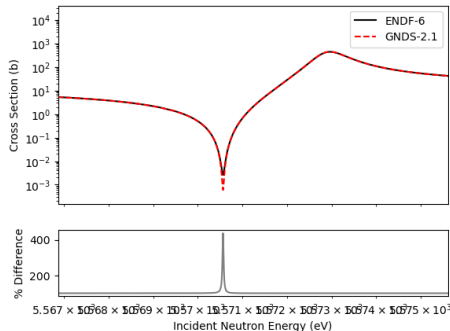
Updated continuous energy (CE) library format for SCALE now accommodates a table of Bragg edge energies and structure factors, significantly reducing library size compared to the full double differential representation.



AMPX development highlights – GNDS 2.1

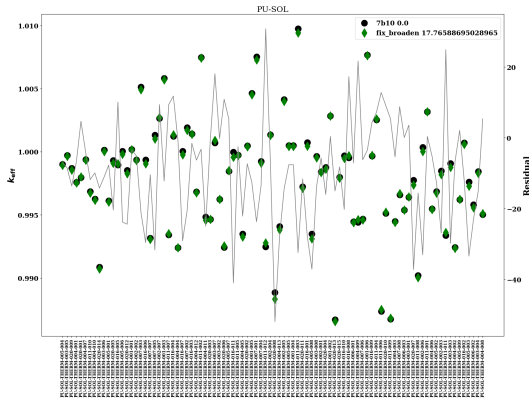
Point data and covariance data have been benchmarked using ENDF-6 and GNDS-2.1 formats of ENDF/B-VIII.1.

- Point data: All nuclides but four exhibited percent differences less than 1%
- Covariance data: 187/266 produced identical covariance data, with the remainder under investigation



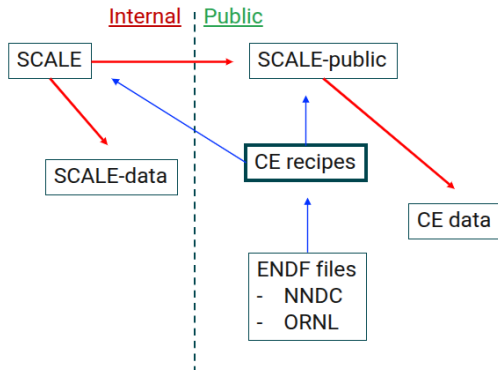
AMPX development highlights – Modernized CE modules

Major effort has gone towards validating the modern C++ implementations of the CE library modules, `jamaican` and `platinum`.



Efforts to streamline library production

ce-recipes streamlines the CE library production workflow, with plans for public availability



Efforts to streamline library production

Caveat: `ce-recipes` still depends on Java-based ExSite utility

A C++ implementation of the ExSite capabilities has begun to support

- Common software routines for ENDF/GNDS format I/O
- Incorporation of AMPX into environments/workflows such as ADVANCE

Looking ahead

- Completion of GNDS-2.1 support and validation
 - Focus on kinematic and TSL data
- Multigroup library optimizations for SCALE 7
- Enhancements/bug fixes to support ORIGEN activation libraries
 - Especially to support any developments of an ENDF/B-IX activation library
- Increase code-sharing with SAMMY
- Performance enhancements, such as:
 - Improve TSL processing times
 - Improve URR/probability table treatment

Conclusions

AMPX development in the past year has focused heavily on updating the CE library creation workflow and GNDS-2.1 support.

`https://code.ornl.gov/scale/code/scale-public`

This work was supported by the Nuclear Criticality Safety Program, funded and managed by the National Nuclear Security Administration for the US Department of Energy; and the Nuclear Regulatory Commission.