Attila4MC - CAD Integrated Calculation Setup, Variance Reduction, and Solution Visualization for Monte Carlo

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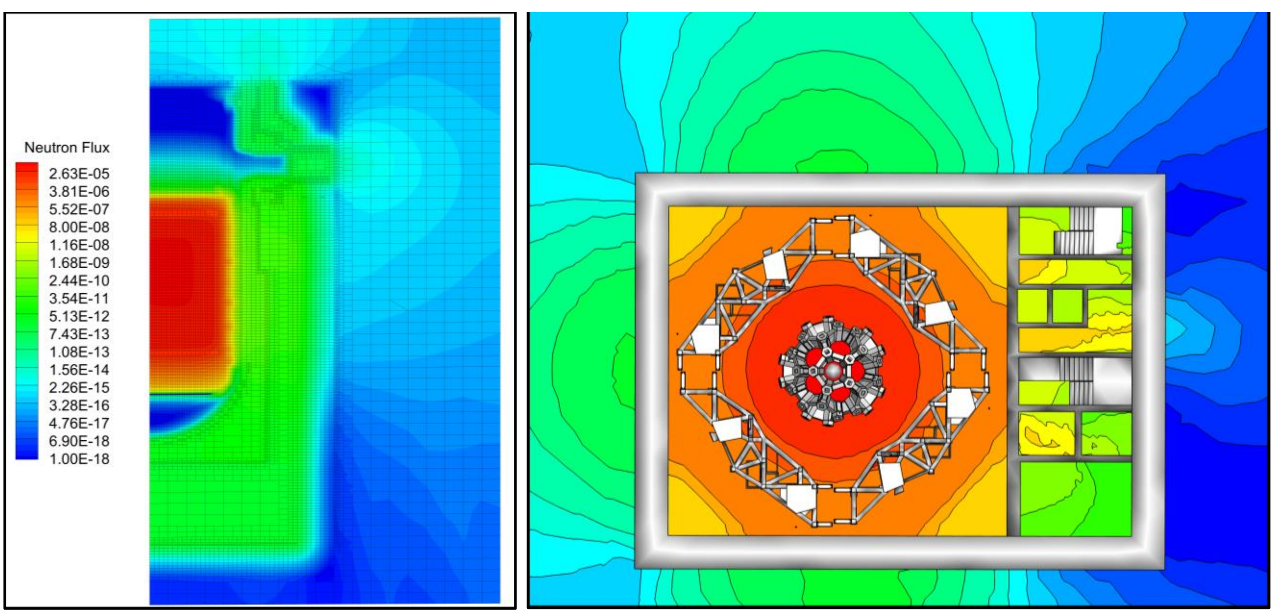
Attila4MC® provides MCNP® users (OpenMC and PHITS support avail soon) with a GUI based environment to set up, run, and visualize MCNP unstructured mesh solutions from complex CAD geometries.

In this workshop, the new "real-world" CAD workflow in Attila4MC will be demonstrated on a complex SMR shielding model. This workflow enables users to work directly from dirty CAD assemblies with hundreds or thousands of parts, and with "transport insignificant" part interferences, mostly eliminating the need for time consuming CAD cleanup and simplification. An integral part of this workflow is the Cottonwood Variance Reduction module, which performs "single click" CADIS and FW-CADIS variance reduction on complex models through an automatic arbitrary mesh refinement (AMR) deterministic solver.

The new Tamarack module will also be demonstrated. Tamarack provides MCNP constructive surface geometry (CSG) users with an intuitive GUI interface for building, editing, and viewing MCNP input decks. Tamarack can export translated CSG models to CAD using boundary spline surface representations in the STEP (*.stp) format, providing robust and flexible coupling with CAD.

The second half of this workshop is hands-on, where attendees will set up, run, and visualize a deep penetration shielding model starting from CAD. Attendees wishing to run Attila4MC should bring a Windows 10 or 11 laptop with at least 12 GB of RAM. Attendees wishing to also run MCNP must have MCNP 6.2.0 or 6.3.0 installed.

All attendees will receive a 3-week license of Attila4MC following the workshop. For any questions regarding the workshop, contact support@silverfirsoftware.com. For more information on Attila4MC and Tamarack, visit www.silverfirsoftware.com.



Left: Neutron flux field generated by the Cottonwood Variance Reduction Module and visualized in Attila4MC. Right: MCNP solution field set up with Attila4MC including Cottonwood variance reduction.