Overview of Griffin Reactor Physics Code Technologies

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Griffin is a reactor physics code which has been developed primarily to simulate advanced reactors. It uses deterministic methods for neutronics and has features common to many reactor physics applications. It also includes specialized features for advanced reactors, a few examples being cross section generation capabilities optimized for fast reactors as well as specific capabilities to model pebble bed reactors. Griffin is based on the MOOSE framework and couples to easily to other MOOSE based codes to create robust multiphysics simulations.

This workshop will present an overview of the Griffin technologies for advanced reactor modeling. First, a general overview of the Griffin code including what it means to be a MOOSE based code will be provided. Next, a detailed overview of the methodologies for online cross section generation for thermal reactors will be covered. This will be followed by a detailed overview of fast reactor modeling capabilities including cross section generation and fuel cycle analysis.

The purpose of this workshop is to make attendees aware of the technologies being implemented in Griffin for the purpose of potentially using Griffin in the future in their own work, or for reference to compare with other tools for advanced reactor analysis. Presentation material will be provided and attendees can bring their personal computer to make reviewing material easier. Griffin requires a license to use, but MOOSE is open source and instructions will be provided on using MOOSE on personal computers.