CURRENT ISSUES IN COMPUTATIONAL METHODS–ROUNDTABLE

Session Organizer: Dmitriy Anistratov (NCSU)

Panel Discussion

Mathematical modeling of a complex physical phenomenon involves several major elements. The foundation of everything is a theoretical physical model that describes the phenomenon. This model is formulated by a set of equations of different types (PDEs, ODEs, etc.). The coefficients of the governing equations are parameters of the physical model. They are obtained on the basis of experiments and theoretical analysis. The complicated system of the equations defining the physical model is solved by means of various numerical methods. These numerical methods are building blocks for sophisticated computational tools that are created to perform numerous computer simulations of the physical phenomenon. To improve predictive capability of numerical simulations, it is necessary to enhance every element of mathematical modeling.

The panelists of this roundtable will talk about challenges in simulation of different physical systems. They will discuss simulations of
- Radflow project at Los Alamos National Laboratory
- Transient Reactor Test Facility (TREAT) at Idaho National Laboratory
- Light waters reactors at Consortium for Advanced Simulations of LWRs
- Molten salt reactors at Oak Ridge National Laboratory

Panelists: *Benjamin Betzler (ORNL)*
Mark DeHart (INL)
David Kropaczek (NCSU, CASL)
Todd Urbatsch (LANL)