

On classical and modern approximations for neutron transport in a unified framework

jeudi 26 octobre 2023 11:00 (1h 30m)

In this lecture we consider the numerical approximation of the neutron transport equation.

First, we will model the relevant physical processes using integro-partial differential equations.

Next, we discuss classical approximation techniques, such as Legendre expansions or the discrete ordinates method, which have mostly been treated independently. We present a variational framework that allows to interpret these method all at once - in particular a unified error estimate holds.

The second part of the lecture concerns the numerical solution of the linear systems arising from these discretization. Within our variational setting, we will investigate subspace correction techniques for the robust solution of these systems.

Orateur: SCHLOTTBOM, Matthias (University of Twente)