

Proposal for a project work of 2 semesters or a Bachelor work

Subject:

Implementing Exponential Time Integration for the Discontinuous Galerkin Time Domain Method

Description:

The Discontinuous Galerkin Time-Domain Method (DGTD) is an efficient numerical approach for solving Maxwell's equations in large-scale problems. However, it is based on an explicit time integration scheme and, therefore, is sensitive to the quality of the computational mesh. Runge-Kutta methods are often used here because of their simplicity and low memory requirements. In this project we want to study the efficiency of an exponential time integration scheme and implement it in the existing DGTD code.