Bern-Fribourg Graduate Seminar

a seminar for Master and PhD students

Wednesday 17th May, 2023: 17:15 - 18:00

Room B7, Exakte Wissenschaften, Bern

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Runge-Kutta based local time-stepping methods for forced wave equations

Abstract

One of the most important hyberpolic partial differential equation (PDE) is the wave equation. Using the method of lines, we can write the PDE as a system of ordinary differential equations (ODEs) in time. For solving this system of ODEs one may use the finite element method (FEM), with the explicit "Runge Kutta"-method. Accordingly, the choice of a stable time step satisfying the Courant-Friedrichs-Lewy (CFL) condition is required. In this talk I present the Runge-Kutta local time- stepping method and some numerical results on a L-shape domain