CRC Workshop Time Integration of PDEs
October 11 - 15, 2021

Participants and Talks

	Name	Talk
1	Abdelmonem, Mohamed	Numerical calculation of error bounds for locally implicit preconditioning
2	Buchholz, Tim	Domain decomposition for the wave equation
3	Burkhard, Selina	Gaussian wave packets for the magnetic Schrödinger equation
4	Carle, Constantin	Special topics about leapfrog-Chebyshev schemes
5	Dörich, Benjamin	Maximum norm estimates for the full discretization of non-autonomous wave equations
6	Dörner, Julian	Implementation of dG methods for quasilinear Maxwell equations
7	Eckhard, Daniel	Numerical homogenization of parabolic problems with multiple spatial and temporal scales
8	Freese, Jan Philip	Perfectly matched layers for Maxwell's equations
9	Grimm, Volker	An extended Krylov subspace method for decoding edge-based compressed images by homogeneous diffusion
10	Hochbruck, Marlis	–
11	Kirn, Michael	Numerical methods for the nonlinear Dirac equation
12	Kliesch, Tobias	Trigonometric integration in LAMMPS
13	Köhler, Jonas	Locally implicit preconditioning for Maxwell equations
14	Kumbhar, Pratik	Locally implicit preconditioning for Maxwell equations
15	Leibold, Jan	Space discretization error analysis for wave equations with nonlinear coupled acoustic boundary conditions
16	Neher, Markus	–
17	Nick, Jörg	Electromagnetic scattering from nonlinear boundary conditions
18	Schrammer, Stefan	Error analysis of St-LO
19	Verfürth, Barbara	Numerical upscaling for wave equations with time-dependent multiscale coefficients
20	Zerulla, Konstantin	Time integration of Maxwell equations with low regularity
21	Zimmermann, Rebekka	A leap-frog FEM method for Maxwell-Schrödinger equations

Program (as of October 5, 2021)

Monday, October 11		
13:00-16:30		Arrival
18:00-18:30		Welcome
18:30-20:00		Dinner
20:00–20:30	Burkhard, Selina	Gaussian wave packets for the magnetic Schrödinger equation
20:30–21:00	Zimmermann, Rebecca	A leap-frog FEM method for Maxwell-Schrödinger equations

Tuesday, October 12		
08:00–09:00		Breakfast
09:15–10:00	Nick, Jörg	Electromagnetic scattering from nonlinear boundary conditions
10:00–10:45	Leibold, Jan	Space discretization error analysis for wave equations with nonlinear coupled acoustic boundary conditions
10:45–11:00		Break
11:00–11:45	Schrammer, Stefan	Error analysis of St-LO
11:45–12:30	Carle, Constantin	Special topics about leapfrog-Chebyshev schemes
12:30–13:30		Lunch
13:30–15:45		Free for activities and discussions
15:45–16:30	Pratik Kumbhar	Locally implicit preconditioning for Maxwell equations
16:30–17:15	Jonas Köhler	Locally implicit preconditioning for Maxwell equations
17:15–17:30		Break
17:30–17:45	Mohamed Abdelmonem	Numerical calculation of error bounds for locally implicit preconditioning
17:45–18:00	Julian Dörner	Implementation of dG methods for quasilinear Maxwell equations
18:00–18:15	Tim Buchholz	Domain decomposition for the wave equation
18:15–18:30	Daniel Eckhard	Numerical homogenization of parabolic problems with multiple spatial and temporal scales
18:30–20:00		Dinner

Wednesday, October 13		
08:00–09:00		Breakfast
09:15–18:00		Hike
19:30–22:00		Dinner in restaurant

Thursday, October 14		
08:00–09:00		Breakfast
09:15–10:00	Dörich, Benjamin	Maximum norm estimates for the full discretization of non-autonomous wave equations
10:00–10:45	Zerulla, Konstantin	Time integration of Maxwell equations with low regularity
10:45–11:00		Break
11:00–11:45	Freese, Philip	Perfectly matched layers for Maxwell's equations
11:45–12:30	Kirn, Michael	Numerical methods for the nonlinear Dirac equation
12:30–13:30		Lunch
13:30–18:30		Free for activities and discussions
18:30–20:00		Dinner
20:00–21:30	Christian and Mathias	Project management with Zenkit

Friday, October 15		
08:00–09:00		Breakfast
09:00–09:15		Checkout
09:15–10:00	Verfürth, Barbara	Numerical upscaling for wave equations with time-dependent multiscale coefficients
10:00–10:45	Kliesch, Tobias	Trigonometric integration in LAMMPS
10:45–11:00		Break
11:00–11:45	Grimm, Volker	An extended Krylov subspace method for decoding edge-based compressed images by homogeneous diffusion
12:30–13:30		Lunch
13:30		Departure

Journey to Hirschegg:

Bus 1 (departs at 9:00): Constantin (F), Jan (F), Stefan (F), Benjamin, Philip, Pratik, Tobias
Bus 2 (departs at 9:00): Marlis (F), Michael (F), Jonas, Jörg (abholen A8), Rebekka, Selina, Tim
Bus 3 (departs at 10:30): Konstantin (F), Markus (F), Volker (F), Barbara, Daniel, Julian, Mohamed

Journey back to Karlsruhe:

Bus 1 (departs after last talk): Jan

Bus 2 (tba):

Bus 3 (tba):