CRC 1173 *Wave phenomena: analysis and numerics*

Programme of the first annual meeting

Bildungshaus St. Bernhard, Rastatt, April 04-08, 2016

Venue of the meeting

The first annual meeting of CRC 1173 will take place at the

> Bildungshaus St. Bernhard, An der Ludwigsfeste 50, 76437 Rastatt
> http://www.st-bernhard-rastatt.de

Rastatt is nearby Karlsruhe and can be easily reached by car or by public transport. Informations (in German) about travel to the workshop venue are available here:

> http://www.st-bernhard-rastatt.de/anfahrt/

Timetables of the public trasport system can be found here:

> http://en.kvv.de/

General informations

The meeting will start on Monday (4 April) at 10 am and will end on Friday (8 April) after lunch.

Accomodation for registered participants is reserved from Monday to Friday. No reservations have been made from Sunday (3 April) to Monday (4 April). Registered participants will have full board.

On Monday, the rooms will not be ready for check-in before noon. You are kindly requested to leave your luggage in the conference room.

There will be no parallel sessions. The conference room is equipped with a beamer and a flipchart, but unfortunately there is no blackboard.

Project presentations (PP) are non-technical overview talks given by the PIs. The talks given by the PhD students are status reports (SR) and should focus on the PhD students' own work. It is not necessary to explain what is done in other parts of the projects. The length of the slots is as follows:

- Project presentations of projects with PIs from engineering: 25 min talk plus 15 min discussion
- Project presentations of all other projects: 20 min talk plus 10 min discussion
- Status reports: 20 min talk plus 5 min discussion

Social programme: On Wednesday afternoon (6th April) there will be a short hike (6-7 km, 75 min per way) to the famous Rastatt Favorite Palace, including a guided tour. The guided tour will take about 50 min, with an admission charge of 7-8 Euros (for groups). For more informations see http://schloss-favorite.de/en/home/.

If you have any questions, please feel free to contact Tobias Jahnke (`jahnke@kit.edu`).

Monday, 4 April 2016

9:30-10:00   Arrival at the Bildungshaus

10:00-10:30   PP A9: Spectral methods for dispersive equations
                  (Kunstmann, Weis)
10:30-11:00   PP A1: Random signals in nonlinear fiber optics
                  (Hundertmark, Kunstmann, Weis)
11:00-11:30   PP B2: Dispersion Management
                  (Hundertmark, Schnaubelt)

12:00-13:30   Lunch and check-in

13:30-14:00   PP C1: Local inversion for linear seismic imaging
                  (Kunstmann, Rieder)
14:00-14:40   PP C2: Seismic imaging by full waveform inversion
                  (Bohlen, Kirsch, Rieder, Wieners)
14:40-15:20   PP B7: Dynamics of electro-cardiac depolarization waves
                  (Dössel, Wieners)

15:30-16:00   Coffee

16:00-18:00   Discussion

18:00   Dinner

19:30   Meeting of the CRC board

Tuesday, 5 April 2016

9:00-9:30   PP B6: Stability of patterns for hyperbolic-parabolic equations
                  (Plum, Rottmann-Matthes)
9:30-10:00   PP B5: Biharmonic wave maps
                  (Lamm, Schnaubelt)
10:00-10:30   PP A3: Adaptive implicit space-time discretization for wave equations
                  (Dörfler, Wieners)

10:30-10:45   Coffee

10:45-11:10   SR: Baron (B7)
11:10-11:35   SR: Zeltmann (C2)
11:35-12:00   SR: Shigapov (C2)

12:00-13:30   Lunch

13:30-14:10	PP C4: Modeling, design and optimization of 3D waveguides
	(Dörfler, Koos, Reichel, Rockstuhl)
14:10-14:50	PP B3: Frequency combs
	(Jahnke, Koos, Reichel)
14:50-15:30	PP B4: Effective characterization of optical metamaterials beyond a local response
	(Plum, Rockstuhl)
15:30-16:00	Coffee
16:00-18:00	Member's Meeting
18:00	Dinner

Wednesday, 6 April 2016

9:00-9:30	PP A7: Numerical methods for highly oscillatory problems
	(Hochbruck, Jahnke, Lubich)
9:30-10:00	PP A2: Numerical methods for wave problems with nontrivial boundary conditions
	(Hochbruck, Lubich)
10:00-10:25	SR: Kovács (A2)
10:30-10:45	Coffee
10:45-11:10	SR: Mikl (A7)
11:10-11:35	SR: Krämer (B1)
11:35-12:00	SR: Findeisen (A3)
12:00-13:30	Lunch
13:30-18:00	Hike to the Rastatt Favorite Palace including a guided tour (registration required)
18:00	Dinner

Thursday, 7 April 2016

9:00-9:30	PP B1: Klein-Gordon-Zakharov systems in high-frequency regimes
	(Schneider, Schratz)
9:30-10:00	PP A8: Failure of amplitude equations
	(Schneider)
10:00-12:00	Poster session (coffee break included)
12:00-13:30	Lunch
13:30-13:55	SR: Haas (A8)
13:55-14:20	SR: Hornung (A9)
14:20-14:45	SR: Sturm (A4)
14:45-15:10	SR: Eilinghoff (A4)
15:15-16:00	Coffee

16:00-18:00   Discussion

18:00   Dinner

Friday, 8 April 2016

9:00-9:30   PP A4: Time integration of Maxwell equations
              (Hochbruck, Jahnke, Schnaubelt)
9:30-10:00   PP A5: Qualitative behavior of nonlinear Maxwell equations
              (Schnaubelt, Weis)
10:00-10:30   PP A6: Time-periodic solutions for nonlinear Maxwell equations
              (Plum, Reichel)

10:30-10:45   Coffee

10:45-11:10   SR: Spitz (A5)
11:10-11:35   SR: Idzik (A6)
11:35-12:00   SR: Hirsch (A6)

12:00-13:30   Lunch

13:30   Departure

Project Area A ● Mathematical Foundations

A1   Random signals in nonlinear fiber optics
(Hundertmark, Kunstmann, Weis)

A2   Numerical methods for wave problems with nontrivial boundary conditions
(Hochbruck, Lubich)

A3   Adaptive implicit space-time discretization for wave equations
(Dörfler, Wieners)

A4   Time integration of Maxwell equations
(Hochbruck, Jahnke, Schnaubelt)

A5   Qualitative behavior of nonlinear Maxwell equations
(Schnaubelt, Weis)

A6   Time-periodic solutions for nonlinear Maxwell equations
(Plum, Reichel)

A7   Numerical methods for highly oscillatory problems
(Hochbruck, Jahnke, Lubich)

A8   Failure of amplitude equations
(Schneider)

A9   Spectral methods for dispersive equations
(Kunstmann, Weis)

Project Area B ● Dynamical Models

B1   Klein-Gordon-Zakharov systems in high-frequency regimes
(Schneider, Schratz)

B2   Dispersion Management
(Hundertmark, Schnaubelt)

B3   Frequency combs
(Jahnke, Koos, Reichel)

B4   Effective characterization of optical metamaterials beyond a local response
(Plum, Rockstuhl)

B5   Biharmonic wave maps
(Lamm, Schnaubelt)

B6   Stability of patterns for hyperbolic-parabolic equations
(Plum, Rottmann-Matthes)

B7   Dynamics of electro-cardiac depolarization waves
(Dössel, Wieners)

Project Area C ● Identification and Design

C1   Local inversion for linear seismic imaging
(Kunstmann, Rieder)

C2   Seismic imaging by full waveform inversion
(Bohlen, Kirsch, Rieder, Wieners)

C4   Modeling, design and optimization of 3D waveguides
(Dörfler, Koos, Reichel, Rockstuhl)