CRC 1173 *Wave phenomena: analysis and numerics*

Programme of the second annual meeting

Bildungshaus St. Bernhard, Rastatt, March 20-24, 2017

Venue of the meeting

The second 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 (20 March) at 10 am and will end on Friday (24 March) after lunch. A welcome coffee is offered at 9:30 on Monday.

Accomodation for registered participants is reserved according to the replies to the participation poll. Registered participants will have full board. Breakfast is only provided for those who sleep at the Bildungshaus. 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, a laptop and a flipchart, but unfortunately there is no blackboard.

Project presentations (PP) are non-technical overview talks given by the PIs. The annual presentations given by the PhD students should focus on their 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 and physics: 25 min talk plus 15 min discussion
- Project presentations of all other projects: 20 min talk plus 10 min discussion
- Annual presentations of the PhD students: 20 min talk plus 5 min discussion

Social programme: On Wednesday afternoon, there will be a guided tour with an expert guide through the "Rastatter Rheinaue" (registration required). The "Rastatter Rheinaue" is a remarkable forest close to the Rhine which is flooded by the river several times per year. The tour will take approx. 2.5 hours and it will start in Plittersdorf. To get there we will take a bus from Rastatt city center. The cost is 5 Euro/person + the bus tickets.

Monday, 20 March 2017

9:30-10:00	Welcome coffee
10:00-10:40	PP AP1: Optimal Design of Chiral Structures (Arens, Hettlich, Kirsch, Rockstuhl)
10:40-11:20	PP B4: Effective characterization of optical metamaterials beyond a local response (Plum, Rockstuhl)
11:20-12:00	PP C4: Modeling, design and optimization of 3D waveguides (Dörfler, Koos, Reichel, Rockstuhl)
12:00-13:30	Lunch and check-in
13:30-14:10	PP B7: Dynamics of electro-cardiac depolarization waves (Dössel, Wieners)
14:10-14:40	PP C1: Local inversion for linear seismic imaging (Kunstmann, Rieder)
14:40-15:20	PP C2: Seismic imaging by full waveform inversion (Bohlen, Kirsch, Rieder, Wieners)
15:30-16:00	Coffee
16:00-18:00	Discussion
18:00	Dinner
19:30	Meeting of the CRC board

Tuesday, 21 March 2017

9:00-9:30	PP B3: Frequency combs (Jahnke, Koos, Reichel)
9:30-10:00	PP B6: Stability of patterns for hyperbolic-parabolic equations (Plum, Rottmann-Matthes)
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	Kraft (C4)
11:10-11:35	Negredo (C4)
11:35-12:00	Nesic (C4)
12:00-13:30	Lunch
13:30-15:30	Members' Meeting
15:30-16:00	Coffee
16:00-18:00	Poster Session
18:00	Dinner

Wednesday, 22 March 2017

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	Gärtner (B3)
11:10-11:35	Trocha (B3)
11:35-12:00	Mnasri (B4)
12:00-13:30	Lunch
13:30-18:00	Walking-tour through the "Rastatter Rheinaue" (registration required)
18:00	Dinner

Thursday, 23 March 2017

9:00-9:30	PP A1: Random signals in nonlinear fiber optics (Hundertmark, Kunstmann, Weis)
9:30-10:00	PP A9: Spectral methods for dispersive equations (Kunstmann, Weis)
10:00-10:30	PP B5: Biharmonic wave maps (Lamm, Schnaubelt)
10:30-10:45	Coffee
10:45-11:15	PP B1: Klein-Gordon-Zakharov systems in high-frequency regimes (Schneider, Schratz)
11:15-11:45	PP A8: Failure of amplitude equations (Schneider)
12:00-13:30	Lunch
13:30-13:55	Chaichenets (A1)
13:55-14:20	Ziegler (A3)
14:20-14:45	Baumstark (B1)
14:45-15:10	Hornung (A5)
15:30-16:00	Coffee
16:00-18:00	Discussion
18:00	Dinner

Friday, 24 March 2017

9:00-9:30	PP A2: Numerical methods for wave problems with nontrivial boundary conditions (Hochbruck, Lubich)
9:30-10:00	PP A7: Numerical methods for highly oscillatory problems (Hochbruck, Jahnke, Lubich)
10:00-10:30	PP B2: Dispersion Management (Hundertmark, Schnaubelt)
10:30-10:45	Coffee
10:45-11:10	Hipp (A2)
11:10-11:35	Flohr (B6)
11:35-12:00	Grathwohl (C1)
12:00-13:30	Lunch
13:30	Departure

Projects of the CRC 1173

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)

Associated projects

AP1 Optimal Design of Chiral Structures
(Arens, Hettlich, Kirsch, Rockstuhl)

AP2 Nonlinear Helmholtz equations and systems
(Mandel)

AP3 Numerical multiscale methods
(Gallistl)