Collaborative Research Centre 701

Spectral Structures and Topological Methods in Mathematics
Spectral Analysis, Asymptotic Distributions and Stochastic Dynamics

Projects 2001

H. Abels
Dynamics and geometry of algebraic linear groups

W.-J. Beyn
Numerics and spectral analysis of infinite-dimensional systems

P. Blanchard
Selforganized criticality

F. Götze
Asymptotics of stochastic models and spectral distributions

W. Hansen
Harmonic functions and non homogeneous media

M. Röckner
Analysis and geometry of differential operators and stochastic processes in infinite dimensional spaces

partly integrated in July 2005 into SFB 701
In CRC 701 applied and theoretical mathematics have joined forces in order to realize the considerable potential of infra disciplinary research. Besides representation theoretic methods and p-adic structures in arithmetic algebraic geometry there was

- Influence of new concepts of mathematical physics:
  - Seiberg-Witten invariants in topology
  - universal spectral distributions in quantum physics and number theory
  - quantum field theory and theory of moduli spaces in algebraic topology
  - concepts of quantum information and quantum groups

- Applications in theoretical physics, fluid dynamics, crystallography, material sciences and mobile communications of results in
  - topology
  - number theory
  - stochastic analysis
  - free probability

respectively.
Principal investigators 2005-09
Principal investigators 2009-13
Principal investigators 2013-17
Projects and project areas 2013-17:

**B**
Spectral Structures

- Beyn
- Baake - Huck
- Röckner
- Gentz
- Beyn - Gentz - Röckner
- Herr
- Grigor'yan
- Kondratiev
- Grigor'yan - Kondratiev - Kaßmann
- Kaßmann
- Götzte - Kösters

**C**
Topological Methods in Algebra

- Spieß - Zink
- Baumeister - Bux
- Hoffmann - Spieß
- Krause - Voll
- Voll
- Haydys - Rollenske
- Bauer - Haydys
- Krause

**A**
Stochastic and Dynamical Processes

- Bux - Götzte
- Baake - Gähler
- Hoffmann - Spieß
- Baumeister - Bux
- Krause - Voll
The width and depth of these interactions are reflected in the topics of events like:

**Hermann Weyl Conference**

**September 10-13, 2006**

The CRC 701 (Sonderforschungsbereich) is organizing a conference in honour of Hermann Weyl.

**List of Speakers**

- E. van den Ban (Utrecht)
- M. Broue (Paris)
- C. Deninger (Münster)
- R. Goodman (Rutgers)
- U. Hamenstädt (Bonn)
- G. Huisken (Potsdam)
- J. Jantzen (Aarhus)
- H. Kalf (München)
- A. Laptev (Stockholm)
- T. Lyons (Oxford)
- A. Macintyre (London)
- W. Müller (Bonn)
- N. Nadirashvili (Marseille)
- M. Pflaum (Frankfurt)
- P. Roquette (Heidelberg)
- M. Rost (Bielefeld)
- D. Salamon (ETHZ)
- T.A. Springer (Utrecht)
- D. Stroock (MIT)
- R. Weiss (Tufts)

Click on the poster to see both posters.

Organizers: S. Bauer, A. Grigoryan, D. Poguntke, U. Rehmann, M. Rost, and K. Tent
CONVENORS
Gernot Akemann (Bielefeld, GER)
Friedrich Götze (Bielefeld, GER)

FOR FURTHER QUESTIONS PLEASE CONTACT
Marina Hoffmann
Tel +49 521 106-2768
marina.hoffmann@uni-bielefeld.de
www2.physik.uni-bielefeld.de/randomness2.html

SPEAKERS
J. Brian Conrey (Palo Alto, USA)
Peter J. Forrester (Melbourne, AUS)
Martin Hairer (Warwick, GBR)
Jon Keating (Bristol, GBR)
Manjunath Krishnapur (Bangalore, IND)
Benjamin Schlein (Zurich, SUI)
Thomas Spencer (Princeton, USA)
Martin Zirnbauer (Cologne, GER)

MATHEMATICS IN AND PHYSICS
RANDOMNESS FROM SPIN CHAINS TO NUMBER THEORY
8 - 20 AUGUST 2016

8/1
Workshop "Non-crossing partitions in representation theory"

Thursday, 12 June to Saturday, 14 June 2014

Location: Bielefeld University. All talks will be given in the main university building (UHG), for detailed information please see the workshop programme. Maps are available on the university's travel information page.

Schedule: Talks start Thursday morning and finish Saturday in the late afternoon.

Organisers: Barbara Baumeister, Andrew Hubery, Henning Krause, Christian Stump


Registration: If you would like to attend the workshop, please register using the webform.

Workshop speakers

- Drew Armstrong (Coral Gables, Florida)
- David Bessis (Paris)
- Tom Brady (Dublin)
- Frédéric Chapoton (Lyon)
- Raquel Coelho Simões (Lisbon)
- Patrick Dehornoy (Caen)
- Matthew Dyer (Notre Dame, Indiana)
- Thomas Gobet (Amiens)
- Christian Krattenthaler (Vienna)
- Gus Lehrer (Sydney)
- Jean Michel (Paris)
- Dmitri Panov (Moscow)
- Nathan Reading (Raleigh, North Carolina)
- Claus Michael Ringel (Bielefeld)
- Roland Speicher (Saarbrücken)
- Hugh Thomas (Fredericton)
Hiring strategy supported by faculty and university: strengthen the areas between the CRCs existing main research fields

create new perspectives for collaboration and future projects.

Vacancies due to retirement or accepted outside offers: immediate or overlapping new appointments, e.g. H. Abels, W.-J. Beyn, C.M. Ringel and T. Zink

Deferred retirements for completing a successful grant period: W.-J. Beyn, F. Götze and T. Zink

counter offers to W3 positions: Ch. Voll and M. Kaßmann

Extension of this policy in CRC 1283. (K.-U. Bux, S. Herr and Chr. Voll)
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoffmann, Werner</td>
<td>C3</td>
<td>2005</td>
</tr>
<tr>
<td>Gentz, Barbara**</td>
<td>W2</td>
<td>2006</td>
</tr>
<tr>
<td>Grigor’yan, Alexander</td>
<td>W3</td>
<td>2006</td>
</tr>
<tr>
<td>Gähler, Franz</td>
<td>(tenured)</td>
<td>2008</td>
</tr>
<tr>
<td>Bux, Kai-Uwe**</td>
<td>W2</td>
<td>2009</td>
</tr>
<tr>
<td>Emmrich, Etienne*</td>
<td>W2</td>
<td>2009</td>
</tr>
<tr>
<td>Kaßmann, Moritz**</td>
<td>W2</td>
<td>2009</td>
</tr>
<tr>
<td>Hornbostel, Jens*</td>
<td>W2</td>
<td>2010</td>
</tr>
<tr>
<td>Krause, Henning</td>
<td>W3</td>
<td>2010</td>
</tr>
<tr>
<td>Herr, Sebastian</td>
<td>W2</td>
<td>2011</td>
</tr>
<tr>
<td>Rollenske, Sönke*</td>
<td>W2</td>
<td>2011</td>
</tr>
<tr>
<td>Voll, Christopher**</td>
<td>W2</td>
<td>2011</td>
</tr>
<tr>
<td>Baumeister, Barbara</td>
<td>Akad. Oberrätin</td>
<td>2011</td>
</tr>
<tr>
<td>Banas, Lubomir</td>
<td>W2</td>
<td>2013</td>
</tr>
<tr>
<td>Zhu, Rongchan</td>
<td>W1 junior</td>
<td>2016</td>
</tr>
<tr>
<td>Zhu, Xiangchan</td>
<td>W1 junior</td>
<td>2016</td>
</tr>
<tr>
<td>Crawley-Boevey, William</td>
<td>W3 Humboldt</td>
<td>2016</td>
</tr>
<tr>
<td>Gess, Benjamin</td>
<td>W2, W3</td>
<td>2017-2019</td>
</tr>
<tr>
<td>Vial, Charles</td>
<td>W2</td>
<td>2017</td>
</tr>
<tr>
<td>Diening, Lars</td>
<td>W3</td>
<td>2017</td>
</tr>
<tr>
<td>Hofmanova, Martina</td>
<td>W2 (non-tenured)</td>
<td>2017</td>
</tr>
</tbody>
</table>

*: left

**: stayed with W3
Examples of qualification of young PIs:

H. Kösters (A4) University of Rostock
A. Haydys (C11) University of Freiburg
C. Huck (A1) ZITiS, München
C. Richard (B2) University of Erlangen
A. Nickel (C7) Heisenberg Fellowship
F. Merkl (A3) LMU München
K. Froyshov (C1) University of Oslo
A. Langer (B5) University of Exeter
E. Lau (B5) University of Paderborn, Bielefeld
V. Pakunas (C7) University of Essen
Bielefeld Postdocs related to CRC 701:

L. Hille (C3) University of Münster
H. Matzinger (A3) Georgia Tech
S. Rolles (A3) LMU München
P. Zeiner (A1) University Kuala Lumpur
D. Kielak (C8) ERC Starting Grant 2019
Totals 2005-2017

Preprints: 1163
Guests: 1976
Budget: 23,625,400
Overhead: 4,227,180