

SFG-Meeting for Doctoral Reseachers 20–22 June 2012 St.-Afra-Klosterhof Meißen

Program

20 June

- till 18:00 Arrival
- 18:15 Dinner at St.-Afra-Klosterhof Meißen
- 20:30 Get-together at Elbsommer Meißen

21 June

- 08:00–09:00 Breakfast
- 09:00–10:30 Prof. Dr. Andreas Schadschneider (Uni Köln)
“Don't panic! The physics of pedestrian dynamics and other
biological transport processes”

Coffee Break

- 11:00–12:30 Dr. André Casajus (Uni Leipzig)
“The Shapley value and the potential approach in
cooperative game theory”

Lunch

- 14:00–14:30 Mario Heidernätsch (TU Chemnitz)
“Introduction to GPU computing with CUDA – Pros and
Cons explained with simple examples”
- 14:30–15:00 Michael Bauer (TU Chemnitz)
“Detecting bugs and bottlenecks in C/C++ sources”

15:00–15:30 Daniel Rings (Uni Leipzig)
“The power of Perl and Mathematica in science”

Coffee Break

16:00–16:30 Markus Selmke (Uni Leipzig)
“Visualization in science”

16:30–17:00 Ilya Semenov (Uni Leipzig)
“Image acquisition and processing”

Coffee Break and Posters

18:00–18:30 Sergii Gaidar (MPI-CPG Dresden)
“Matlab as scientific tool”

18:30–19:00 Philipp Zeigermann (Uni Leipzig)
“Origin as scientific tool”

19:30 Dinner at Domkeller Meißen

22 June

08:00–09:00 Breakfast

Departure

List of Posters

Subhasis Adhikari (Uni Leipzig)
“Single molecule dynamics in glassy polymer systems”

Michael Bauer (TU Chemnitz)
“Characterizing heterogeneous diffusion by the distribution of diffusivities”

Andrea Bregulla (Uni Leipzig)
“Gold capped nanoparticles as self-propelled thermophoretic swimmers”

Hergen Brutzer (BIOTEC, TU Dresden)
“Resolving length changes of single DNA molecules with angstrom accuracy in real time”

Nicklas Fricke (Uni Leipzig)
“Self-avoiding walks on dilute lattices”

Carsten Schuldt (Uni Leipzig)

“Contractile force generation by entropic softening of actin networks”

Markus Selmke (Uni Leipzig)

“Diffraction around a hot nanoparticle”

Abstracts

Don't panic! The physics of pedestrian dynamics and other biological transport processes

Prof. Dr. Andreas Schadschneider (Uni Köln)

The dynamics of pedestrians shows many interesting collective phenomena which are in many ways interesting for physicists as well. For practical purposes, such as for instance the security analysis of soccer stadiums or other public buildings, simple models are needed which are, however, capable of realistically reproducing the relevant aspects of the dynamics.

The talk will give an introduction to the major empirical and theoretical aspects of pedestrian dynamics and the motion of large crowds of people. Apart from various modeling concepts, experiments used for their verification and calibration will be presented. An example for such a specific application is an "evacuation assistant" which is currently being tested in the Esprit Arena in Düsseldorf. Additional analogies to other biological transport processes will be demonstrated, such as the traffic on ant trails.

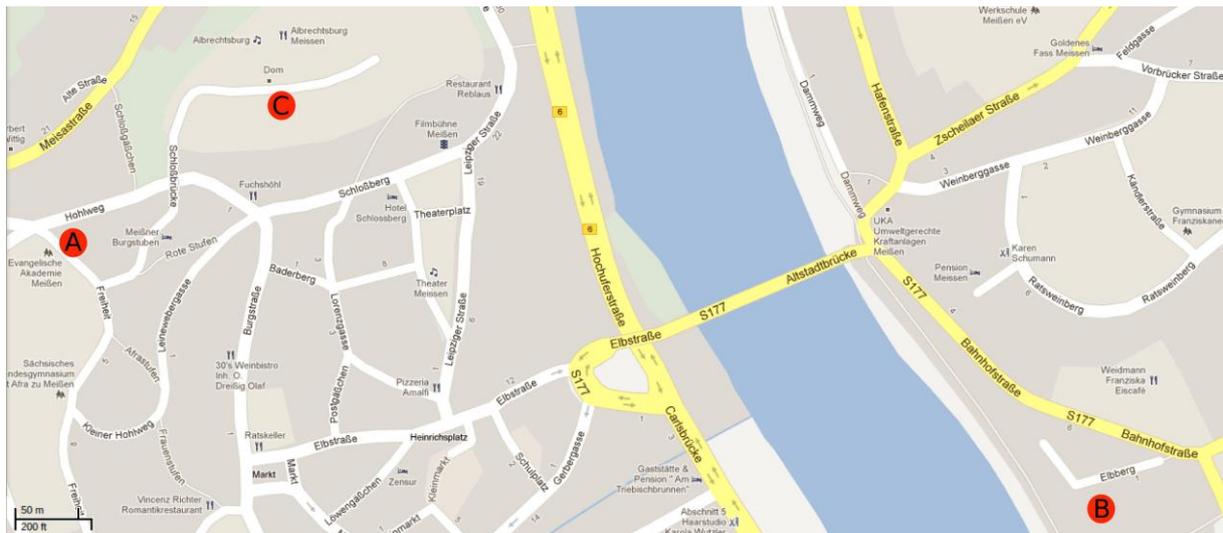
The Shapley value and the potential approach in cooperative game theory

Dr. André Casajus (Uni Leipzig)

1. I introduce coalitional games with transferable utility (TU games).
2. Then, I talk about the certainly most eminent one-point solution concept for TU games, the Shapley value.
3. Finally, I present the potential approach to one-point solutions for TU games in general and to the Shapley value in particular.
4. To conclude the talk, I relate the potential approach of cooperative game theory to the potential approach in physics—possibly with your help ;-)

Addresses in Meißen

- A St.-Afra-Klosterhof
Freiheit 16
- B Elbsommer Meißen
Elbberg 3
- C Domkeller Meißen
Domplatz 9



Hints

- On 22 June, the guest rooms have to be left till 9:00.
- Please do not bring your own beverages or food. Otherwise, a korkage will be invoiced.
- The costs for board and lodging will be covered by the SFG central project, whereas travel expenses have to be paid by the single projects.
- The costs for the get-together at Elbsommer Meißen on the first evening have to be paid by yourself.