
Info_plasticity is a newsletter for distributing information among the "dislocation-based plasticity community". Please send your news to info_plasticity@for1650.kit.edu

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Recently published papers can be entered at www.for1650.kit.edu/54.php

Dear all,

After the successful workshops on 'Dislocation based Plasticity' in Kloster Schöntal in 2014 and 2016, we want to organize this workshop for the third time. Again, it will be a **4-day workshop with the focus on 'Dislocation based plasticity' which will be held in the historic monastery Kloster Schöntal in the South of Germany, on February 26 - March 1, 2018.**

The workshop is organized by Prof. Peter Gumbsch and Prof. Thomas Böhlke (Karlsruhe Institute of Technology, Germany) as the speakers of the DFG-supported Research Group 'FOR 1650 - Dislocation based plasticity' and Dr. Katrin Schulz as the coordinator of the research group. The targeted size of this international workshop is again about 80 scientists. Our aim is to continue this series of meetings as a forum for intense discussions, knowledge exchange and networking within the active (modeling/experimental/theoretical) dislocation community.

Please find attached the workshop flyer with detailed information.

Kind regards,
Peter Gumbsch
Thomas Böhlke
Katrin Schulz

Recent publications:

- Le, K. C., Tran, T. M., & Langer, J. S. (2017). Thermodynamic dislocation theory of high-temperature deformation in aluminum and steel. *Phys. Rev. E*, 96, 013004.
- Schulz, K., Sudmanns, M., & Gumbsch, P. (2017). Dislocation-density based description of the deformation of a composite material. *Modelling and Simulation in Materials Science and Engineering*, 25(6).
- Hochrainer, T. (2017). On the Derivation of Boundary Conditions for Continuum Dislocation Dynamics. *Crystals*, 7(8), 235.
- Javaid, F., Stukowski, A., & Durst, K. (2017). 3D Dislocation structure evolution in strontium titanate: Spherical indentation experiments and MD simulations. *Journal of the American Ceramic Society*, 100(3), 1134-1145.
- Gunkelmann, N., Alhafez, I. A., Steinberger, D., Urbassek, H. M., & Sandfeld, S. (2017). Nanoscratching of iron: A novel approach to characterize dislocation microstructures. *Computational Materials Science*, 135, 181-188.

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The location

The symposium will take place in the refurbished former Cistercian monastery Bad Schöntal in Germany. The monastery was founded in 1157 and is located in the south of Germany.

<http://www.kloster-schoental.de>

Über die Forschergruppe *FOR 1650*

**... about the research
group *FOR 1650***

The research group *FOR 1650 Dislocation-based Plasticity* is funded by the German Research Foundation (‘Deutsche Forschungsgemeinschaft’), DFG. The research group aims at development of dislocation-based simulation methods for prediction of deformation processes in metallic materials on the micrometer- and sub-micrometer scales. Methods employed in these projects range from discrete dislocation dynamics simulations through dislocation density-based continuum methods to enhanced gradient models. Well defined averaging procedures allow bridging between the methods. Overall behaviour as well as statistical descriptions are compared to experiments specifically tailored to validate the models on a microstructural scale.

This symposium at the beginning of the second 3-year period of *FOR1650* is meant to review the entire topic *Dislocation-based Plasticity* with the international experts in the wider thematic area.

<http://www.for1650.kit.edu>

The Schöntal Symposium

Dislocation- based Plasticity

DFG Forschergruppe FOR 1650

— *First announcement* —

On behalf of the DFG research group *FOR 1650 Dislocation-based Plasticity*, you are invited to the 3rd Schöntal Symposium held at the monastery Bad Schöntal in Germany.

The focus of the symposium is on Dislocation-based Plasticity and related topics. The symposium will feature thematic lectures but will mainly be a forum for intense discussions, knowledge exchange and networking within the research community concerned with dislocations, their modeling, experimental observations, and theoretical assessment.

**February 25 – March 2, 2018
Bad Schöntal, Germany**

<http://www.for1650.kit.edu>

Registration and Contact

The **conference fee** will be 600€ and covers the cost for a single room for 5 nights, all meals and soft drinks during the day.

Payment of the conference fee: can be done by bank transfer or directly at the conference venue – cash or credit cards accepted.

Registration starts on 1st of August 2017; deadline is the 17th of December 2017.
Since the number of participants is limited to 80, the registration will be handled on a first come first serve basis.

For **registering** please use the online registration form on the homepage. For further inquiries please send an E-mail to: katrin.schulz@kit.edu

Best wishes,

Peter Gumbsch (FOR1650 speaker)
Thomas Böhlke (co-speaker)
Katrin Schulz (coordinator)

<http://www.for1650.kit.edu>

Preliminary Symposium Schedule

Targeted size of this symposium is ~80 participants. Oral presentations have already been finalized; participants are encouraged to bring a poster for the extended poster session.

Sunday, February 25

Arrival and dinner

Monday, February 26

Session organizer: Helena Van Swygenhoven.

Topic: *Dislocations and interfaces*

Tuesday, February 27

Session organizer: Gerhard Dehm.

Topic: *Dislocation based plasticity – experiment vs. simulation*

Wednesday, February 28

Session organizer: Jaafar El-Awady.

Topic: *Dislocation modeling – discrete-continuum transition*

Thursday, March 1

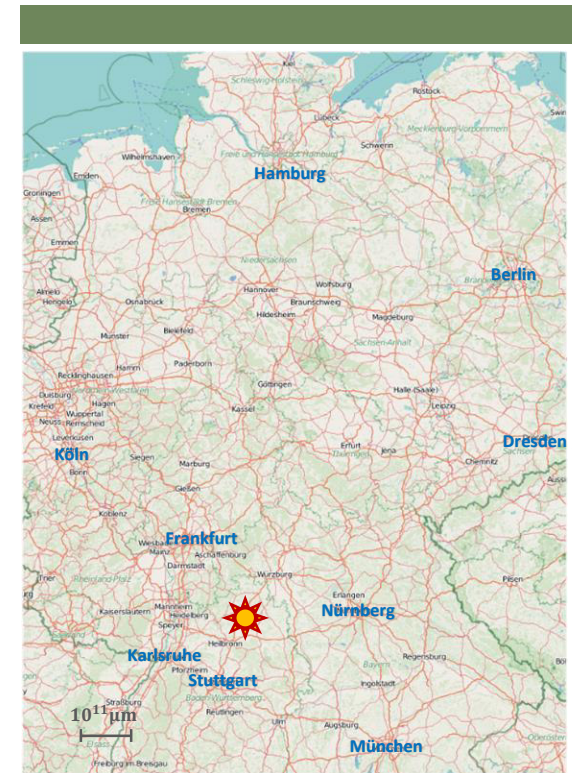
Session organizer: Paul Steinmann.

Topic: *Current state and challenges in developing a physical based continuum theory of dislocations*

Friday, March 2

Breakfast, Departure

<http://www.for1650.kit.edu>



How to get there...

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- from Frankfurt airport: 175km (1:50 h by car, 2:30 h by public transportation)
- from Stuttgart airport: 115km (1:15 h by car, 2:00 h by public transportation)
- from Nürnberg airport: 175km (1:50 h by car, 2:45 h by public transportation)