



# Preface

The research training group 1554 is located at the Otto von Guericke University, Magdeburg (OvGU) and is financed by the German Research Foundation (DFG). The members are PhD students, postdocs, and professors from the faculties of mechanical engineering, process and systems engineering, mathematics and natural sciences. Their working areas cover topics from different engineering branches, applied mathematics as well as theoretical and computational physics.

In order to promote scientific exchange and discussions, workshops take place twice a year. These semi-annual workshops are traditionally organized by the PhD students themselves.

This document contains all necessary information for the Winter Workshop 2016 of the DFG research training group *Micro-Macro-Interactions in Structured Media and Particle Systems*, which will take place at the *Arcona Hotel am Havelufer* in *Potsdam* from October 20<sup>th</sup> to 21<sup>th</sup>, 2016.

I'd like to thank everybody who has made suggestions concerning the programme, thus contributing to a successful workshop and scientific exchange among the members of the research training group. Special thanks goes to my colleague Sebastian Dieck for constant support throughout the organization of the workshop.

Magdeburg, October 14<sup>th</sup>, 2016

Gaurav Kulkarni  
(student representative)

## Contents

<b>1</b>	<b>Location and Travel Guide</b>	<b>3</b>
1.1	Workshop venue . . . . .	3
1.2	Journey to Potsdam on October 20 <sup>th</sup> , 2016 . . . . .	3
1.3	Journey to Magdeburg on October 21 <sup>th</sup> , 2016 . . . . .	3
<b>2</b>	<b>Timetable</b>	<b>4</b>
2.1	Thursday . . . . .	4
2.2	Friday . . . . .	5
<b>3</b>	<b>Social Programme</b>	<b>6</b>
<b>4</b>	<b>Workshop Dinner</b>	<b>6</b>
<b>5</b>	<b>List of Participants</b>	<b>7</b>
5.1	Professors . . . . .	7
5.2	Post-Docs . . . . .	7
5.3	Students . . . . .	7

# 1 Location and Travel Guide

## 1.1 Workshop venue

The workshop will take place at:

**Arcona Hotel am Havelufer**

**Zeppelinstraße 136**

**D-14471 Potsdam**

+49 (0) 331 98150

[potsdam.arcona.de/en/](http://potsdam.arcona.de/en/)

## 1.2 Journey to Potsdam on October 20<sup>th</sup>, 2016

- at 06:50 we meet at train station *Magdeburg Hbf* on platform *6a*
- RE 18107 starts at 07:08 from platform 6a
- RE 18107 arrives at *Werder (Havel)* at 08:12. From here we have to board RE 18173 from platform 2 at 08:42 (30 minutes transfer time)
- RE 18173 arrives at *Potsdam Charlottenhof* at 08:48
- The workshop venue is 5 minutes (300 m) walk from *Potsdam Charlottenhof*  
<https://goo.gl/maps/nwDFtcjygAz>

## 1.3 Journey to Magdeburg on October 21<sup>th</sup>, 2016

- at 13:24 we leave from *Potsdam Charlottenhof* with RE 28715 from platform 2
- RE 28715 arrives at *Potsdam Hbf* at 13:26. From here we have to board RE 18120 from platform 3 at 13:39 (13 minutes transfer time)
- RE 18120 arrives at *Magdeburg Hbf* at 14:49

With regard to passenger transport within *Potsdam*, please see timetables at [www.vbb.de](http://www.vbb.de). For more information about the city, please visit [www.potsdam.de](http://www.potsdam.de).

## 2 Timetable

### 2.1 Thursday

09:25	<b>Opening</b>		
<b>S1</b>			<b>Chair: Helal Chowdhury</b>
09:30	Sara	Bucci	Analytical homogenized model for the elastic behaviour of honeycombs
09:50	Martin	Weber	Determine the effective stiffness of inhomogeneous materials after large deformations
10:10	Christoph	Marten	<b>New Student:</b> The Riemann problem for a weakly hyperbolic two-phase flow model
10:20	<b>Coffee break</b>		
<b>S2</b>			<b>Chair: Sara Bucci</b>
10:40	Resam	Makvandi	Isogeometric Analysis Applications: Gradient Elasticity
11:00	Zhengkun	Liu	Phase Field Modeling towards Crack Propagation in Polycrystals
11:20	Evgeniya Stratieva	Roydeva	Novel strategy of generation of zeolite coatings on spherical particles by a fluidized bed procedure
11:40	Johanna	Eisenräger	Calibration of a Two-Phase Mixture Model Based on High Temperature Tensile Tests
12:00	<b>Lunch</b>		
<b>S3</b>			<b>Chair: Yuan Fang</b>
<b>Presentation of Posters</b> (max. 3 min. each)			
13:00	Abbas	Kamranian	CFD-DEM simulation of fine particles fluidized bed
	Katja	Mader - Arndt	Micromechanical contact behavior of titanium dioxide coated glass particles
	Janett	Schmelzer	Effect of heat treatment on properties and microstructure of V-Si materials
	Marcus	Aßmus	Homogeneous substitute material for XLWT composite core layer
	Helal	Chowdhury	Critical resolved shear stress estimation for complex microstructures
	Amir	Eshghinejadfard	Lattice Boltzmann: an efficient simulation tool for a variety of fluid flows
	Ahu	Öncü	Experimental analysis of polycrystalline grain microstructures in thin films

	Jörg Christian	Reiher	$3^{rd}$ gradient of strain elastoplasticity
<b>13:30</b>	<b>Poster session with coffee and cake</b>		
<b>14:30</b>	<b>Board meeting</b>		
<b>16:00</b>	<b>Potsdam <i>Nachtwächter</i> tour</b> (starting point: <i>Hotel Arcona am Havelufer</i> , foyer)		
<b>18:30</b>	<b>Dinner at <i>Restaurant Athos</i></b>		

## 2.2 Friday

<b>S4</b>			<b>Chair:Zhengkun Liu</b>
09:00	Alireza	Attari Moghaddam	Liquid velocity in drying porous media: pore network vs. continuum model
09:20	Nicole	Vorhauer	Capillary wet porous media under temperature oscillation with different orders of frequency
09:40	Yasaman	Jabbari	Estimation of continuum model parameters for wetting porous media from pore network simulations
09:55	Kristin	Simon	Local Projection Stabilization for Advection-Diffusion Equations on Surfaces
<b>10:15</b>	<b>Coffee Break</b>		
<b>S5</b>			<b>Chair: Nicole Vorhauer</b>
10:30	Gaurav	Kulkarni	Analytical approach for determining the boiling curve
10:50	Julia	Becker	Hardening effects in Molybdenum solid solutions
11:10	Sebastian	Dieck	Influence of heat treatment and strain rate on mechanical behaviour of martensitic stainless steel
11:30	Yuan	Fang	An analytical model for heat transfer analysis in the film boiling regime
<b>11:50</b>	<b>Closing remarks</b>		
<b>12:00</b>	<b>Lunch</b>		

Please adhere to your specified presentation time, i.e. 15 minutes of speaking time for presentations and maximum 3 minutes of speaking time for posters. Talks exceeding this limit will be canceled by the chairman or chairwoman, respectively.

### 3 Social Programme

On Friday, we will go for a *Nachtwächter* city tour (Night watchman's city tour). We will meet at the foyer of our hotel at 16:00 and we will travel to *Brandenburger Tor* by walk. The distance is 20 minutes (1.4 km) by walk.

Check the route at <https://goo.gl/maps/wvsSdxofTA82>.

From *Brandenburger Tor* we will start our tour. Two guided tours are offered, in English and German. We will take part in an interesting walk through famous and lesser known places along the former city walls of old Potsdam. This is a special guided city tour in which the guide wears historic dresses and talks about old stories/tales about the historic stories of Potsdam.

For details please visit the tour website at [www.potsdamer-nachtwaechter.de](http://www.potsdamer-nachtwaechter.de)

### 4 Workshop Dinner

The city tour will end at in front of the *Nikolaikirche* at 18:00. From there we will walk to restaurant *Athos*. The distance is 22 minutes (1.8 km) by walk. Kindly check the following link for the route:

<https://goo.gl/maps/fvNVWNwFoQx>

We start our dinner there at 18:30. Please remember what dish you've chosen!

The address of the restaurant is:

**Athos Potsdam - Griechisches Restaurant**  
**Zeppelinstraße 152**  
**14471 Potsdam**  
+49(0) 331 974524  
[www.athos-potsdam.de/Willkommen.html](http://www.athos-potsdam.de/Willkommen.html)

The way back to hotel is very short, only 450m:  
<https://goo.gl/maps/9BzqjGjQwA62>

Please check the website of the research training group for updated versions of the programme:  
[www.grk1554.ovgu.de](http://www.grk1554.ovgu.de)

## 5 List of Participants

### 5.1 Professors

Holm **Altenbach**  
Institute of Mechanics  
holm.altenbach@ovgu.de

Albrecht **Bertram**  
Institute of Mechanics  
albrecht.bertram@ovgu.de

Thorsten **Halle**  
Institute of Materials and Joining Technology  
thorsten.halle@ovgu.de

Daniel **Juhre**  
Institute of Mechanics  
daniel.juhre@ovgu.de

Manja **Krüger**  
Institute of Materials and Joining Technology  
manja.krueger@ovgu.de

Konstantin **Naumenko**  
Institute of Mechanics  
konstantin.naumenko@ovgu.de

Franziska **Scheffler**  
Institute of Chemistry  
franziska.scheffler@ovgu.de

Eckehard **Specht**  
Institute for Fluid Dynamics and Thermodynamics  
eckehard.specht@ovgu.de

Dominique **Thévenin**  
Institute for Fluid Dynamics and Thermodynamics  
dominique.thevenin@ovgu.de

Lutz **Tobiska**  
Institute for Analysis and Numerics  
lutz.tobiska@ovgu.de

Evangelos **Tsotsas**  
Institute of Process Engineering  
evangelos.tsotsas@ovgu.de

Gerald **Warnecke**  
Institute for Analysis and Numerics  
gerald.warnecke@ovgu.de

Dana **Zöllner**  
Institute of Experimental Physics  
dana.zoellner@ovgu.de

### 5.2 Post-Docs

Abdolreza **Kharaghani**  
Institute of Process Engineering  
abdolreza.kharaghani@ovgu.de

Ashok Kumar **Nallathami**  
Institute of Fluid Dynamics and Thermodynamics  
ashok.nallathambi@ovgu.de

### 5.3 Students

Marcus **Aßmus**  
Institute of Mechanics  
marcus.assmus@ovgu.de

Sara **Bucci**  
Institute of Mechanics  
sara.bucci@ovgu.de

Alireza **Attari Moghadam**  
Institute of Process Engineering  
a.attari.m@st.ovgu.de

Helal **Chowdhury**  
Institute of Mechanics  
helal.chowdhury@ovgu.de

Julia **Becker**  
Institute of Materials and Joining Technology  
julia.becker@ovgu.de

Sebastian **Dieck**  
Institute of Materials and Joining Technology  
sebastian.dieck@ovgu.de

Johanna **Eisenträger**  
Institute of Mechanics  
johanna.eisentraeger@ovgu.de

Amir **Eshghinejadfard**  
Institute of Fluid Dynamics and Thermodynamics  
amir.eshghinejadfard@ovgu.de

Yuan **Fang**  
Institute of Fluid Dynamics and Thermodynamics  
m\_yuanfang@hotmail.com

Yasaman **Jabbari**  
Institute of Process Engineering  
m\_yasaman.jabbari@ovgu.de

Abbas **Kamranian Marnani**  
Institute of Process Engineering  
abbas.kamranian@st.ovgu.de

Gaurav **Kulkarni**  
Institute of Fluid Dynamics and Thermodynamics  
gaurav.kulkarni@ovgu.de

Zhengkun **Liu**  
Institute of Mechanics  
zhengkun.liu@ovgu.de

Katja **Mader-Arndt**  
Institute of Process Engineering  
katja.mader@ovgu.de

Resam **Makvandi**  
Institute of Mechanics  
resam.makvandi@ovgu.de

Christoph **Matern**  
Institute of Analysis and Numerics  
christoph.matern@ovgu.de

Ahu **Öncü**  
Institute of Materials and Joining Technology  
ahu.oencue@ovgu.de

Jörg Christian **Reiher**  
Institute of Mechanics  
christian.reiher@ovgu.de

Evgeniya **Roydeva**  
Institute of Chemistry  
evgeniya.roydeva@st.ovgu.de

Janett **Schmelzer**  
Institute of Materials and Joining Technology  
janett.schmelzer@ovgu.de

Kristin **Simon**  
Institute for Analysis and Numerics  
kristin.simon@ovgu.de

Nicole **Vorhauer**  
Institute of Process Engineering  
nicole.vorhauer@ovgu.de

Martin **Weber**  
Institute of Mechanics  
martin.weber@ovgu.de