

# Conference Agenda of IKM 2015

Last updated on 17/07/2015

## General plan

<b>Date: Monday, 20/Jul/2015</b>	
<b>8:30am</b>	<b>Registration</b>
Conference office	
<b>9:30am - 10:00am</b>	<b>Conference Opening Ceremony</b>
Lecture hall 6	
<b>10:00am - 11:00am</b>	<b>IL I: Invited Lecture I</b>
Lecture hall 6	Session Chair: Prof. Volker Rodehorst
<b>11:00am - 11:30am</b>	<b>Coffee Break</b>
<b>11:30am - 12:30pm</b>	<b>IL II: Invited Lecture II</b>
Lecture hall 6	Session Chair: Prof. Tom Lahmer
<b>12:30pm - 2:00pm</b>	<b>Lunch Break</b>
<b>2:00pm - 3:30pm</b>	<b>SA1.1: Optimization in Engineering Applications I</b>
Conference room 208	Session Chair: Prof. Walter Alt
<b>2:00pm - 3:30pm</b>	<b>SA1.2: Function Theoretic Methods and PDE in Engineering Sciences I</b>
Conference room 210	Session Chair: Prof. Helmut R. Malonek
<b>3:30pm - 4:00pm</b>	<b>Coffee Break</b>
<b>4:00pm - 5:30pm</b>	<b>SA2.1: Optimization in Engineering Applications II</b>
Conference room 208	Session Chair: Prof. Tom Lahmer
<b>4:00pm - 5:30pm</b>	<b>SA2.2: Function Theoretic Methods and PDE in Engineering Sciences II</b>
Conference room 210	Session Chair: Prof. Wolfgang Sproessig
<b>6:30pm</b>	<b>Guided City Tour</b>
<b>7:30pm</b>	<b>Get Together Evening</b>

**Date: Tuesday, 21/Jul/2015**

<b>9:30am - 10:30am</b>	<b>IL III: Invited Lecture III</b> Session Chair: Prof. Swanhild Bernstein
Lecture hall 6	
<b>10:30am - 11:00am</b>	<b>Coffee Break</b>
<b>11:00am - 12:30pm</b>	<b>SB1.1: Optimization in Engineering Applications III</b> Session Chair: Prof. Gerd Teschke
Conference room 208	
<b>11:00am - 12:30pm</b>	<b>SB1.2: Data, Information and Knowledge Modeling in Civil Engineering I</b> Session Chair: Prof. Kay Smarsly
Conference room 210	
<b>11:00am - 12:30pm</b>	<b>SB1.3: Mathematical Methods for (Robotics and) Computer Vision I</b> Session Chair: Prof. Paula Cerejeiras
Conference room 108	
<b>12:30pm - 2:00pm</b>	<b>Lunch Break</b>
<b>2:00pm - 3:30pm</b>	<b>SB2.1: Optimization in Engineering Applications IV</b> Session Chair: Dr. Ghada Karaki
Conference room 208	
<b>2:00pm - 3:30pm</b>	<b>SB2.2: Data, Information and Knowledge Modeling in Civil Engineering II</b> Session Chair: Prof. Hans-Joachim Bargstädt
Conference room 210	
<b>2:00pm - 3:30pm</b>	<b>SB2.3: Mathematical Methods for (Robotics and) Computer Vision II</b> Session Chair: Dr. Eckhard Hitzer
Conference room 108	
<b>3:30pm - 4:00pm</b>	<b>Coffee Break</b>
<b>4:00pm - 6:00pm</b>	<b>SB3.1: Function Theoretic Methods and PDE in Engineering Sciences III</b> Session Chair: Prof. Yuri Grigor'ev
Conference room 208	
<b>4:00pm - 6:00pm</b>	<b>SB3.2: Data, Information and Knowledge Modeling in Civil Engineering III</b> Session Chair: Prof. Hans-Joachim Bargstädt
Conference room 210	
<b>4:00pm - 6:00pm</b>	<b>SB3.3: Numerical Modeling in Engineering</b> Session Chair: Prof. Uwe Kaehler
Conference room 108	
<b>7:00pm</b>	<b>Conference Dinner</b>

**Date: Wednesday, 22/Jul/2015**

<b>9:30am - 10:30am</b>	<b>IL IV: Invited Lecture IV</b> Session Chair: Prof. Klaus Gürlebeck
Lecture hall 6	
<b>10:30am - 11:00am</b>	<b>Coffee Break</b>
<b>11:00am - 12:30pm</b>	<b>SC1.1: Function Theoretic Methods and PDE in Engineering Sciences IV</b> Session Chair: Prof. Rolf Sören Kraußhar
Conference room 208	
<b>11:00am - 12:30pm</b>	<b>SC1.2: Data, Information and Knowledge Modeling in Civil Engineering IV</b> Session Chair: Prof. Kay Smarsly
Conference room 210	
<b>12:30pm - 2:00pm</b>	<b>Lunch Break</b>
<b>2:00pm - 4:00pm</b>	<b>SC2.1: Function Theoretic Methods and PDE in Engineering Sciences V</b> Session Chair: Prof. Angela Hommel
Conference room 208	
<b>2:00pm - 4:00pm</b>	<b>SC2.2: Optimization in Engineering Applications V</b> Session Chair: Dr. Jörg Meier
Conference room 210	

# Presentations Monday, 20/Jul/2015

## IL I: Invited Lecture I

*Time:* Monday, 20/Jul/2015: 10:00am - 11:00am · *Location:* Lecture hall 6  
*Session Chair:* Volker Rodehorst

### Modern Applications of Clifford Geometric Algebra

**Eckhard Hitzer**

International Christian University, Japan; [hitzer@icu.ac.jp](mailto:hitzer@icu.ac.jp)

## IL II: Invited Lecture II

*Time:* Monday, 20/Jul/2015: 11:30am - 12:30pm · *Location:* Lecture hall 6  
*Session Chair:* Tom Lahmer

### Optimal Control applied to a Problem of Material Testing

**Walter Alt**

Friedrich-Schiller-Universität Jena, Germany; [walter.alt@uni-jena.de](mailto:walter.alt@uni-jena.de)

## SA1.1: Optimization in Engineering Applications I

*Time:* Monday, 20/Jul/2015: 2:00pm - 3:30pm · *Location:* Conference room 208  
*Session Chair:* Walter Alt

### Benchmarking Optimization Algorithms

**Jörg Meier**<sup>1</sup>, **Tom Schanz**<sup>2</sup>

<sup>1</sup>Gruner AG, Switzerland; <sup>2</sup>Ruhr-Universität Bochum; [joerg.meier@vint.de](mailto:joerg.meier@vint.de)

### Gabor frames on the sphere and reconstruction of crystallographic structures

**Uwe Kaehler**

University of Aveiro, Portugal; [ukaehler@ua.pt](mailto:ukaehler@ua.pt)

### Optimizing acoustic resonators for sonofusion experiments with evolutionary algorithm

**Markus Stokmaier**, A.G. Class, T. Schulenberg, R.T. Lahey Jr.

Dynardo, Germany; [Markus.Stokmaier@gmx.de](mailto:Markus.Stokmaier@gmx.de)

## SA1.2: Function Theoretic Methods and PDE in Engineering Sciences I

*Time:* Monday, 20/Jul/2015: 2:00pm - 3:30pm · *Location:* Conference room 210  
*Session Chair:* Helmuth R. Malonek

### Application of pseudo-complex powers to interpolation in R3

**Maria Irene Falcao**<sup>2</sup>, **Klaus Gürlebeck**<sup>1</sup>, **Dmitrii Legatiuk**<sup>1</sup>, **Helmuth R. Malonek**<sup>3</sup>

<sup>1</sup>Bauhaus-Universität Weimar, Germany; <sup>2</sup>University of Minho, Portugal; <sup>3</sup>University of Aveiro, Portugal; [dmitrii.legatiuk@uni-weimar.de](mailto:dmitrii.legatiuk@uni-weimar.de)

### Eigenfunctions and Fundamental Solutions for the Fractional Laplacian in 3 dimensions

**Milton dos Santos Ferreira**<sup>1</sup>, **Nelson Felipe Loureiro Vieira**<sup>2</sup>

<sup>1</sup>Instituto Politécnico de Leiria, Portugal, CIDMA, University of Aveiro, Portugal; <sup>2</sup>CIDMA, University of Aveiro, Portugal; [milton.ferreira@ipleiria.pt](mailto:milton.ferreira@ipleiria.pt)

### A geometric approach to problems in theories of monogenic functions

**Manh Hung Nguyen**

Bauhaus-Universität Weimar, Germany; [hung.manh.nguyen@uni-weimar.de](mailto:hung.manh.nguyen@uni-weimar.de)

## SA2.1: Optimization in Engineering Applications II

*Time:* Monday, 20/Jul/2015: 4:00pm - 5:30pm · *Location:* Conference room 208  
*Session Chair:* Tom Lahmer

### Selection and Scaling of Ground Motion Records for Seismic Analysis Using Greedy Optimization Algorithm

**Ghada Karaki**

Birzeit University, Palestinian Territories; [gkaraki@birzeit.edu](mailto:gkaraki@birzeit.edu)

### Structural optimization using the energy method with integral material behaviour

**Igor Kavrakov, Hans-Georg Timmler, Guido Morgenthal**

Bauhaus University, Germany; [igor.kavrakov@uni-weimar.de](mailto:igor.kavrakov@uni-weimar.de)

### Best Practice in Metamodeling for Data Derived from Civil Engineering Application

**Maria Steiner, Tom Lahmer**

Bauhaus-Universität Weimar, Germany; [Maria.steiner@uni-weimar.de](mailto:Maria.steiner@uni-weimar.de)

## SA2.2: Function Theoretic Methods and PDE in Engineering Sciences II

*Time:* Monday, 20/Jul/2015: 4:00pm - 5:30pm · *Location:* Conference room 210  
*Session Chair:* Wolfgang Sproessig

### OPERATIONAL PROPERTIES FOR LAGUERRE TRANSFORM

**M. Manuela Rodrigues**

CIDMA-Center for Research and Development in Mathematics and Applications, University of Aveiro, Portugal;  
[mrodrigues@ua.pt](mailto:mrodrigues@ua.pt)

### On some boundary value problems for p-Laplace and p-Dirac equations

**Zainab Al-Yasiri**

Bauhaus University Weimar, Germany; [zainab.al-yasiri@uni-weimar.de](mailto:zainab.al-yasiri@uni-weimar.de)

### Some results on fractional Clifford analysis

**Nelson Vieira**

CIDMA - Center for Research and Development in Mathematics and Applications, Portugal; [nloureirovieira@gmail.com](mailto:nloureirovieira@gmail.com)

# Presentations Tuesday, 21/Jul/2015

## IL III: Invited Lecture III

*Time:* Tuesday, 21/Jul/2015: 9:30am - 10:30am · *Location:* Lecture hall 6  
*Session Chair:* Swanhild Bernstein

### Sparsity and Compressive Sensing in Inverse Problems

**Gerd Teschke**

Neubrandenburg University of Applied Sciences, Germany; [teschke@hs-nb.de](mailto:teschke@hs-nb.de)

## SB1.1: Optimization in Engineering Applications III

*Time:* Tuesday, 21/Jul/2015: 11:00am - 12:30pm · *Location:* Conference room 208  
*Session Chair:* Gerd Teschke

### CALIBRATION OF CYCLIC CONSTITUTIVE MODELS FOR SOILS BY OSCILLATING FUNCTIONS

**Muyiwa Alalade<sup>1</sup>, Binod Kafle<sup>2</sup>, Frank Wuttke<sup>2</sup>, Tom Lahmer<sup>3</sup>**

<sup>1</sup>Bauhaus University Weimar, Germany; <sup>2</sup>Marine and Terrestrial Geomechanics and Geotechnics, Christian-Albrechts-University of Kiel; <sup>3</sup>Institute of Structural Mechanics -Stochastics and Optimization, Bauhaus University Weimar;  
[muyifah@yahoo.com](mailto:muyifah@yahoo.com)

### Parameter identification applying in complex thermo-hydro-mechanical problems like the design of buffer elements

**Long Nguyen-Tuan<sup>1</sup>, Tom Lahmer<sup>1</sup>, Maria Datcheva<sup>2</sup>, Eugenia Stoimenova<sup>2</sup>, Tom Schanz<sup>3</sup>**

<sup>1</sup>Bauhaus-Universitaet Weimar, Germany; <sup>2</sup>Bulgarian Academy of Sciences, Bulgaria; <sup>3</sup>Ruhr-Universitaet Bochum, Germany;  
[long.nguyen.tuan@uni-weimar.de](mailto:long.nguyen.tuan@uni-weimar.de)

### The influence of cracks and overestimation errors on the deflection of the reinforced concrete beams in the Rigid Finite Element Method

**Michał Musiał**

Wroclaw University of Technology, Poland; [michal.musial@pwr.wroc.pl](mailto:michal.musial@pwr.wroc.pl)

## SB1.2: Data, Information and Knowledge Modeling in Civil Engineering I

*Time:* Tuesday, 21/Jul/2015: 11:00am - 12:30pm · *Location:* Conference room 210  
*Session Chair:* Kay Smarsly

### TOWARDS GENERIC BIM QUERIES BASED ON THE IFC OBJECT MODEL AND GRAPH THEORY

**Eike Tauscher, Maximilian Wunsch, Kay Smarsly**

Computing in Civil Engineering, Bauhaus University Weimar, Germany; [eike.tauscher@uni-weimar.de](mailto:eike.tauscher@uni-weimar.de)

### A GENERIC FRAMEWORK SUPPORTING RELIABLE AND EFFICIENT DATA EXCHANGE IN DISTRIBUTED ENGINEERING APPLICATIONS

**Jens Wiggerbrock<sup>1,2</sup>, Kay Smarsly<sup>1</sup>**

<sup>1</sup>Computing in Civil Engineering, Bauhaus University Weimar, Germany; <sup>2</sup>South Westphalia University of Applied Sciences, Germany; [jens.wiggerbrock@uni-weimar.de](mailto:jens.wiggerbrock@uni-weimar.de)

### Parametric geometric modeling in construction planning using industry foundation classes

**Elena Ignatova<sup>1</sup>, Heiko Kirschke<sup>2</sup>, Eike Tauscher<sup>2</sup>, Kay Smarsly<sup>2</sup>**

<sup>1</sup>MSUCE (Moscow State University of Civil Engineering), Russian Federation; <sup>2</sup>Bauhaus-University Weimar;  
[eell2009@yandex.ru](mailto:eell2009@yandex.ru)

## SB1.3: Mathematical Methods for (Robotics and) Computer Vision I

*Time:* Tuesday, 21/Jul/2015: 11:00am - 12:30pm · *Location:* Conference room 108  
*Session Chair:* Paula Cerejeiras

### Towards Stereo Vision- and Laser Scanner-Based UAS Pose Estimation

**Jens Kersten, Volker Rodehorst**

Bauhaus University Weimar, Germany; [jens.kersten@uni-weimar.de](mailto:jens.kersten@uni-weimar.de)

### Multiresolution orientation estimation using Riesz based operators

**Martin Reinhardt**

TU Bergakademie Freiberg, Germany; [martin.reinhardt@math.tu-freiberg.de](mailto:martin.reinhardt@math.tu-freiberg.de)

### Evaluation of the metric trifocal tensor for relative three-view orientation

**Volker Rodehorst**

Bauhaus-Universität Weimar, Germany; [volker.rodehorst@uni-weimar.de](mailto:volker.rodehorst@uni-weimar.de)

## SB2.1: Optimization in Engineering Applications IV

*Time:* Tuesday, 21/Jul/2015: 2:00pm - 3:30pm · *Location:* Conference room 208  
*Session Chair:* Ghada Karaki

### COMPARISON AND COMBINATION OF DIFFERENT APPROACHES FOR THE MODEL-BASED DESIGN OF EXPERIMENTS UNDER MODERATE ERRORS

**Ina Reichert, Peter Olney, Tom Lahmer**

Bauhaus-Universität Weimar, Germany; [ina.reichert@uni-weimar.de](mailto:ina.reichert@uni-weimar.de)

### Optimal sensor location for parameter identification in soft clay

**Raoul Hölder, Elham Mahmoudi, Tom Schanz**

Ruhr-Universität Bochum, Germany; [raoul.hoelster@rub.de](mailto:raoul.hoelster@rub.de)

### An isogeometric symmetric Galerkin boundary element method for two-dimensional elastostatic analysis

**Huy Binh Nguyen<sup>2</sup>, Han D. Tran<sup>2</sup>, Timon Rabczuk<sup>1</sup>**

<sup>1</sup>Bauhaus-University, Germany; <sup>2</sup>Vietnamese-German University, Binh Duong New City, Vietnam; [huybinhce@gmail.com](mailto:huybinhce@gmail.com)

## SB2.2: Data, Information and Knowledge Modeling in Civil Engineering II

*Time:* Tuesday, 21/Jul/2015: 2:00pm - 3:30pm · *Location:* Conference room 210  
*Session Chair:* Hans-Joachim Bargstädt

### The criteria's set with invariant design building elements on the base of three imputations: "convenience", "safety" and "energy-efficiency"

**Andrey Volkov<sup>1</sup>, Heiko Kirschke<sup>2</sup>, Pavel Chelyshkov<sup>1</sup>, Artem Sedov<sup>1</sup>, Denis Lysenko<sup>1</sup>**

<sup>1</sup>Moscow state university of civil engineering, Russian Federation; <sup>2</sup>Bauhaus-University Weimar; [chelyshkovpd@mgsu.ru](mailto:chelyshkovpd@mgsu.ru)

### Ameliorating employability in construction through BIM innovation

**Abdur Rehman Nasir, Hans-Joachim Bargstädt**

Bauhaus Universität Weimar, Germany; [abdur.nasir@uni-weimar.de](mailto:abdur.nasir@uni-weimar.de)

### Rule based expansion of standard construction process

**Hans-Joachim Bargstädt, Rina Sari Tarigan**

Bauhaus Uni Weimar, Germany; [rina.sari.tarigan@uni-weimar.de](mailto:rina.sari.tarigan@uni-weimar.de)

## SB2.3: Mathematical Methods for (Robotics and) Computer Vision II

*Time:* Tuesday, 21/Jul/2015: 2:00pm - 3:30pm · *Location:* Conference room 108  
*Session Chair:* Eckhard Hitzer

### Reconstruction of signals by compressed sensing methods

**Paula Cerejeiras<sup>1</sup>, Narciso Gomes<sup>1,2</sup>**

<sup>1</sup>University of Aveiro, Portugal; <sup>2</sup>University of Cabo-Verde, Cabo-Verde; [pceres@ua.pt](mailto:pceres@ua.pt)

### Quality control of constructed models using 3D point clouds

**Abd Albasset Almamou, Thomas Gebhardt, Sebastian Bock, Jörg Hildebrand, Willfried Schwarz**  
Bauhaus-Universität, Germany; [abd.albasset.almamou@uni-weimar.de](mailto:abd.albasset.almamou@uni-weimar.de)

## SB3.1: Function Theoretic Methods and PDE in Engineering Sciences III

*Time:* Tuesday, 21/Jul/2015: 4:00pm - 6:00pm · *Location:* Conference room 208  
*Session Chair:* Yuri Grigor'ev

### Variational posing and solution of coupled thermomechanical problems in a reference configuration

**Dmitrii Viktorovich Khristich, Yuri Vladimirovich Astapov**

Tula State University, Russian Federation; [dmitrykhristich@rambler.ru](mailto:dmitrykhristich@rambler.ru)

### The relationship between linear elasticity theory and complex function theory studied on the basis of finite differences

**Angela Hommel<sup>1</sup>, Klaus Gürlebeck<sup>2</sup>**

<sup>1</sup>University of Applied Sciences Zwickau, Germany; <sup>2</sup>Bauhaus University Weimar; [angela.hommel@fh-zwickau.de](mailto:angela.hommel@fh-zwickau.de)

### On Darcy-Brinkman-Forchheimer equations

**Wolfgang Sproessig**

TU Freiberg, Germany; [sproessig@math.tu-freiberg.de](mailto:sproessig@math.tu-freiberg.de)

## SB3.2: Data, Information and Knowledge Modeling in Civil Engineering III

*Time:* Tuesday, 21/Jul/2015: 4:00pm - 6:00pm · *Location:* Conference room 210  
*Session Chair:* Hans-Joachim Bargstädt

### STUDY OF ANALYTICAL MODELS OF THE MECHANICAL BEHAVIOUR OF POLYMER-MODIFIED CONCRETE

**Luise Goebel<sup>1</sup>, Andrea Osburg<sup>2</sup>, Tom Lahmer<sup>3</sup>**

<sup>1</sup>Training Research Group 1462, Bauhaus-Universität Weimar, Germany; <sup>2</sup>F. A. Finger-Institute for Building Materials, Bauhaus-Universität Weimar, Germany; <sup>3</sup>Institute for Structural Mechanics, Bauhaus-Universität Weimar, Germany;  
[luise.goebel@uni-weimar.de](mailto:luise.goebel@uni-weimar.de)

### Use of Microsimulation in the Adaptation to Portugal of the HCM 2000 Methodology for Basic Freeway Segments

**Joaquim Miguel Macedo<sup>1</sup>, Agostinho Benta<sup>1</sup>, Luís Picado-Santos<sup>2</sup>**

<sup>1</sup>University of Aveiro, Portugal; <sup>2</sup>Técnico Lisboa, University of Lisbon, Portugal; [jmacedo@ua.pt](mailto:jmacedo@ua.pt)

### MODEL TO DESCRIBE WALL'S VIBRATIONS IN THE BULK STORAGE BIN

**Andrzej Ubysz, Marek Maj, Michał Musiał, Wojciech Pawlak**

University of Technology Wrocław, Poland; [ubysz@pwr.edu.pl](mailto:ubysz@pwr.edu.pl)

## **SB3.3: Numerical Modeling in Engineering**

*Time:* Tuesday, 21/Jul/2015: 4:00pm - 6:00pm · *Location:* Conference room 108  
*Session Chair:* Uwe Kaehler

### **An investigative study on the effect of soil modeling approach on eigenfrequencies of a two-storey frame structure**

**Reza Khosravian<sup>1</sup>, Frank Wuttke<sup>2</sup>**

<sup>1</sup>Bauhaus-University Weimar, GRK 1462, Germany; <sup>2</sup>Christian-Albrechts-University of Kiel; [Reza.Khosravian.Champiri@uni-weimar.de](mailto:Reza.Khosravian.Champiri@uni-weimar.de)

### **Finite element modelling and experimental validation of catenary pole structures**

**Ingmar Stade, Peter Olney, Maher Deeb**

Bauhaus-Universität Weimar, Germany; [ingmar.stade@uni-weimar.de](mailto:ingmar.stade@uni-weimar.de)

### **Analysis of steel structural members in fire with slender cross-sections through beam finite elements applying an effective constitutive law**

**Nuno Lopes, Daniela Rodrigues, Paulo Vila Real**

University of Aveiro, Portugal; [nuno.lopes@ua.pt](mailto:nuno.lopes@ua.pt)

### **Numerical models for flutter stability analysis of long-span bridges**

**Tajammal Abbas, Guido Morgenthal**

Bauhaus-Universität Weimar, Germany; [tajammal.abbas@uni-weimar.de](mailto:tajammal.abbas@uni-weimar.de)



# Presentations Wednesday, 22/Jul/2015

## IL IV: Invited Lecture IV

*Time:* Wednesday, 22/Jul/2015: 9:30am - 10:30am · *Location:* Lecture hall 6  
*Session Chair:* Klaus Gürlebeck

### Regular Quaternionic Functions and their applications

Yuri Grigor'ev

Nord-Eastern Federal University, Russian Federation; [grigyum@yandex.ru](mailto:grigyum@yandex.ru)

## SC1.1: Function Theoretic Methods and PDE in Engineering Sciences IV

*Time:* Wednesday, 22/Jul/2015: 11:00am - 12:30pm · *Location:* Conference room 208  
*Session Chair:* Rolf Sören Kraußhar

### Monogenic series expansions and an application to linear elasticity

Sebastian Bock

Bauhaus-University Weimar, Germany; [sebastian.bock@uni-weimar.de](mailto:sebastian.bock@uni-weimar.de)

### Kernel-based Frames in Clifford Analysis

Swanhild Bernstein

TU Bergakademie Freiberg, Germany; [swanhild.bernstein@math.tu-freiberg.de](mailto:swanhild.bernstein@math.tu-freiberg.de)

## A MATRIX APPROACH TO FAMILIES OF APPELL POLYNOMIAL SEQUENCES: THE HYPERCOMPLEX CASE

Helmuth R. Malonek<sup>1</sup>, Graça Tomaz<sup>2</sup>

<sup>1</sup>University of Aveiro, Portugal; <sup>2</sup>Polytechnic Institute of Guarda; [hmalon@ua.pt](mailto:hmalon@ua.pt)

## SC1.2: Data, Information and Knowledge Modeling in Civil Engineering IV

*Time:* Wednesday, 22/Jul/2015: 11:00am - 12:30pm · *Location:* Conference room 210  
*Session Chair:* Kay Smarsly

### DECENTRALIZED AUTONOMOUS FAULT DETECTION IN WIRELESS STRUCTURAL HEALTH MONITORING SYSTEMS USING STRUCTURAL RESPONSE DATA

Katrin Jahr<sup>1</sup>, Robert Schlich<sup>1</sup>, Kosmas Dragos<sup>2</sup>, Kay Smarsly<sup>2</sup>

<sup>1</sup>Department of Civil Engineering, Bauhaus University Weimar, Germany; <sup>2</sup>Computing in Civil Engineering, Bauhaus University Weimar, Germany; [katrin.jahr@uni-weimar.de](mailto:katrin.jahr@uni-weimar.de)

### IFC-BASED MONITORING INFORMATION MODELING FOR DATA MANAGEMENT IN STRUCTURAL HEALTH MONITORING

Kay Smarsly, Eike Tauscher

Computing in Civil Engineering, Bauhaus University Weimar, Germany; [eike.tauscher@uni-weimar.de](mailto:eike.tauscher@uni-weimar.de)

### ROBUST SCHEDULING IN CONSTRUCTION ENGINEERING

Veronika Hartmann<sup>1</sup>, Kay Smarsly<sup>1</sup>, Tom Lahmer<sup>2</sup>

<sup>1</sup>Computing in Civil Engineering, Bauhaus University Weimar, Germany; <sup>2</sup>Stochastics and Optimization, Bauhaus University Weimar, Germany; [veronika.hartmann@uni-weimar.de](mailto:veronika.hartmann@uni-weimar.de)

## SC2.1: Function Theoretic Methods and PDE in Engineering Sciences V

*Time:* Wednesday, 22/Jul/2015: 2:00pm - 4:00pm · *Location:* Conference room 208  
*Session Chair:* Angela Hommel

### The problem of partial reinforcing an interface crack edge by a rigid patch plate under in-plane and antiplane loads

**Iuliia Vasileva**

Bauhaus-Universität Weimar, Germany; [vasilyeva.yu@gmail.com](mailto:vasilyeva.yu@gmail.com)

### Fundamentals of a Wiman Valiron theory for polymonogenic functions

**Rolf Sören Kraußhar**<sup>1</sup>, **Regina de Almeida**<sup>2</sup>

<sup>1</sup>Universität Erfurt, Germany; <sup>2</sup>Universidade de Trás os Montes e Alto Douro, Vila Real, Portugal; [soeren.kraussar@uni-erfurt.de](mailto:soeren.kraussar@uni-erfurt.de)

### Clifford operator calculus for boundary value problems of micropolar elasticity

**Klaus Gürlebeck**, **Dmitrii Legatiuk**

Bauhaus-Universität Weimar, Germany; [klaus.guerlebeck@uni-weimar.de](mailto:klaus.guerlebeck@uni-weimar.de)

## SC2.2: Optimization in Engineering Applications V

*Time:* Wednesday, 22/Jul/2015: 2:00pm - 4:00pm · *Location:* Conference room 210  
*Session Chair:* Jörg Meier

### Application of optimization in safe demolition of guyed masts

**Abinet Kifle Habtemariam**, **Volkmar Zabel**

Bauhaus University Weimar, Germany; [abinet.habtemariam@uni-weimar.de](mailto:abinet.habtemariam@uni-weimar.de)

### Topology optimization of structures subjected to multiple load cases by introducing the Epsilon constraint method

**Zouhour Jaouadi**<sup>1</sup>, **Tom Lahmer**<sup>2</sup>

<sup>1</sup>Graduiertenkolleg 1462, Bauhaus Universität Weimar, Germany; <sup>2</sup>Institut für Strukturmechanik, Bauhaus-Universität Weimar, Germany; [zouhour.jaouadi@uni-weimar.de](mailto:zouhour.jaouadi@uni-weimar.de)

### Section optimization and reliability analysis of arch-type dams including coupled mechanical-thermal and hydraulic fields

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### Application of 3d Goal-oriented mesh adaptivity for model error estimation of a specific quantity

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