WCSMO-11

11th World Congress of Structural and Multidisciplinary Optimization

Sydney, Australia
7-12 June, 2015

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Contents

Welcome Message

On behalf of the International Society for Structural and Multidisciplinary Optimization (ISSMO), we warmly welcome you all to the eleventh World Congress of Structural and Multidisciplinary Optimization held at the University of Sydney, Australia from the 7th to 12th June, 2015.

As a top tier international society, ISSMO was founded in October 1991 by George Rozvany and has held the World Congress of Structural and Multidisciplinary Optimization (WCSMO) biennially since 1995. Today is its 20th anniversary since the first WCSMO was held in Goslar, Germany and organized by George Rozvany. In the intervening years, every WCSMO has been held in different continents, and the width and scope of the research presented has increased dramatically. We would like to thank all the delegates for joining the Sydney Congress and trust that the experience in WCSMO proves interesting and enjoyable.

343 papers (167 with full-length papers) will be presented in verbal (317) or poster (26) form with topics ranging from topology and shape optimisation to multidisciplinary optimisation. We hope that there is plenty of scope and new development for discussion. The traditional State of the Art (SOTA) presentation on the Thursday afternoon will be delivered by the invited specialists in emerging and topical issues and should provide plenty of discussion at the congress dinner in the Great Hall of the University of Sydney.

Sydney is a young city being only 230 years old and it is still growing at a fast rate as you can see from the cranes on the skyline. The Sydney harbour dominates the topology of the city and almost no straight streets were shaped during its development. We believe that there is plenty to see and to do in Sydney during this congress week; and for this reason we have created a programme allowing for plenty time to explore and time to network in addition to oral and poster technical sessions. Following the Monday opening ceremony and technical sessions, you are invited to the Congress reception via the harbour cruise in the evening of the 8th June – which is also the Queen's Birthday holiday in Australia and Sydney Vivid night, where you can see the spectacular night views of Sydney harbour. The General Assembly will be held on the Tuesday afternoon which will deliver the reports from the ISSMO president, Secretary General, Treasurer and SMO journal editor. Importantly, this general assembly will form the new executive committee (EC) of ISSMO for the next four years. The Congress banquet will be held at the Great Hall of the University of Sydney on the Thursday evening (11th June). For the traditional WCSMO excursion, we have arranged it on the last day, thus the delegates will have the opportunity to experience being inside the Sydney Opera House, an iconic landmark of Australia by either exploring the architectural design and structural engineering in the day visit; or enjoy the Sydney Symphony Orchestra performance in the evening visit on Friday (12 June).

The conference venue, the University of Sydney, was the first university in Australasia and was founded in 1850. Engineering has been taught here since 1882 and its many thousands of graduates have helped underpin the growth and optimise the development of the nation. It is hoped that you will take the opportunity to explore the University's blend of modern and ancient buildings.

We would like to express our gratitude to all members of the committees involved in the organisation of this Congress, to all the contributing authors and participants, and to all the fellow students and staff members in the Secretariat, who helped create this Congress in Sydney. Also, we thank the sponsors listed on the previous page who helped make this Congress a financial success.

Finally, we hope that you all will take the time to explore Sydney and meet as many new colleagues as possible and remember the 11th WCSMO as a friendly experience.

Qing Li and **Grant P. Steven**
Co-Chairs of
WCSMO-11

Nam-Ho Kim
Chair of International
Papers Committee

Ole Sigmund
President of
ISSMO

Helder C. Rodrigues
Secretary General of
ISSMO

About the ISSMO and the WCSMO

The International Society for Structural and Multidisciplinary Optimization (ISSMO) was founded in October 1991. Today ISSMO has almost one thousand members from more than 50 countries. The objectives of ISSMO are:

- to stimulate and promote research into all aspects of the optimal design of structures as well as multidisciplinary design optimization where the involved disciplines deal with the analysis of solids, fluids or other field problems;
- to encourage practical applications of optimization methods and the corresponding software development in all branches of technology;
- to foster the interchange of ideas amongst various fields contributing to structural and multidisciplinary optimization;
- to support the role of optimization in multidisciplinary design;
- to provide a framework for the organization of meetings and other means for the dissemination of knowledge on structural and multidisciplinary optimization; and
- to promote teaching of structural and multidisciplinary optimization in tertiary institutions.

One of the aims of ISSMO is to bring together researchers and practitioners in the field of structural and multidisciplinary optimization (SMO), by means of international meetings having a high scientific standard. Host selection criteria should include:

- up-to-date conference facilities,
- affordable costs to all members of the society (including registration, hotel, travel expenses, considering also free lunches, banquet, excursions etc.),
- proven congress organizing experience and strength of the local organizing group,
- geographical diversity reflecting the distribution of SMO researchers over the world.

This is meant to imply a reasonably uniform distribution of congresses over three zones, namely Asia-Australia, Europe-Africa and North & South Americas. Along these lines, ISSMO has held biennial World Congresses of Structural and Multidisciplinary Optimization since 1995:

- Goslar, Germany in 1995 (WCSMO-1)
- Zakopane, Poland in 1997 (WCSMO-2)
- Buffalo, United States in 1999 (WCSMO-3)
- Dalian, China in 2001 (WCSMO-4)
- Lido di Jesolo, Italy in 2003 (WCSMO-5)
- Rio de Janeiro, Brazil in 2005 (WCSMO-6)
- Seoul, South Korea in 2007 (WCSMO-7)
- Lisbon, Portugal in 2009 (WCSMO-8)
- Shizouka, Japan in 2011 (WCSMO-9)
- Orlando, United States in 2013 (WCSMO-10)

History of Structural and Multidisciplinary Optimization in Australia

Australia has a long history of leadership in the area of structural and multidisciplinary optimization (SMO).

In 1904, Anthony Michell, FRS, at the University of Melbourne published a paper in the Philosophical Magazine of the Royal Society entitled "The Limits of Economy of Material in Frame-Structures" and so was born the mathematical and engineering discipline of structural optimization. This tradition was carried on many years later by Professor George Rozvany, the founder of the ISSMO at Monash University in the 1960s and 1970s. He subsequently moved to the University of Essen in Germany. In those days, structural optimization was a highly mathematical process with few practical applications. Another seminal contribution was made by Professor Bill Hemp at Oxford University in the 1960s - Professor Grant Steven was a doctorate student of Professor Hemp.

The advent of digital computers and the development of Finite Element Analysis saw the arrival of the concept of using all sorts of algorithms to solve practical problems. A group at the University of Sydney, led by Grant Steven, pioneered the use of quasi-heuristic methods based upon evolutionary processes in nature called Evolutionary Structural Optimisation (ESO).

Several hundred research papers have been published on ESO and its derivatives and the method now has been given mathematical underpinnings. Many of the research students from this period have gone on to become academic researchers themselves and the method and its derivatives are now in common use.

This early work has matured and now the researchers are working in many spin-off applications, the main groups being under Professor Mike Xie at RMIT and Professor Qing Li at the University of Sydney.

The research group at the University of Sydney has 15 members and continues the tradition in structural and multidisciplinary optimization.

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	Ian Manchester	The University of Sydney, Australia
	Guangyong Sun	Hunan University, China and University of Sydney, Australia
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ISSMO Executive Committee Election

Attention all full members of ISSMO

Voting for the next ISSMO executive committee (EC) is almost closed. Do not miss out on electing your new EC.

To vote, please follow these steps:

1. Login with your ISSMO account on the ISSMO home page, www.issmo.net
2. Click on "Current Poll: ISSMO Executive Committee Election 2015" (below the login field)
3. A voting page listing alphabetically the 18 candidates is offered. You should vote for 8 candidates, clicking on the respective boxes.
4. Click "Vote"

Details of the candidates can be found by going to www.issmo.net/elections

The voting system will close on 8th June, 2015 24:00 AEDT (Sydney time).

Note that only members of ISSMO with voting rights can vote. Voting rights are given to those who have attended, with paid registrations, at least one of the last two World Congresses of Structural and Multidisciplinary Optimization prior to the current congress and to those attending, with paid registrations, the current congress (WCSMO-9, -10, and -11).

Past Presidents of ISSMO

George Rozvany	1991-1995
Raphael Haftka	1995-1999
Niels Olhoff	1999-2003
Martin Bendsoe	2003-2007
Kyung K. Choi	2007-2011
Ole Sigmund	2011-2015

Conference Program

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7 June 2015</th><th>Monday
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<tr><td>08:00-08:45</td><td rowspan="5"></td><td rowspan="3">Registration & Opening Ceremony (10:00)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>08:45-09:00</td><td rowspan="3">Excursion: Sydney Opera House Tour</td></tr>
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<tr><td>10:40-11:00</td><td colspan="4">Tea Break</td></tr>
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<tr><td>12:40-14:00</td><td colspan="4">Lunch</td></tr>
<tr><td>14:00-16:00</td><td rowspan="3">Registration</td><td>Parallel Session 2</td><td>Parallel Session 5</td><td>Parallel Session 7</td><td>Parallel Session 11</td></tr>
<tr><td>16:00-16:20</td><td rowspan="3">Congress Reception: Sydney Harbour Cruise (15:45)</td><td colspan="3">Tea Break</td></tr>
<tr><td>16:20-18:00</td><td>General Assembly</td><td>Parallel Session 8</td><td>SOTA Discussion</td></tr>
<tr><td>18:00-20:00</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="2">Congress Dinner</td></tr>
<tr><td>20:00-21:00</td><td rowspan="2">Excursion: Sydney Opera House Concert</td></tr>
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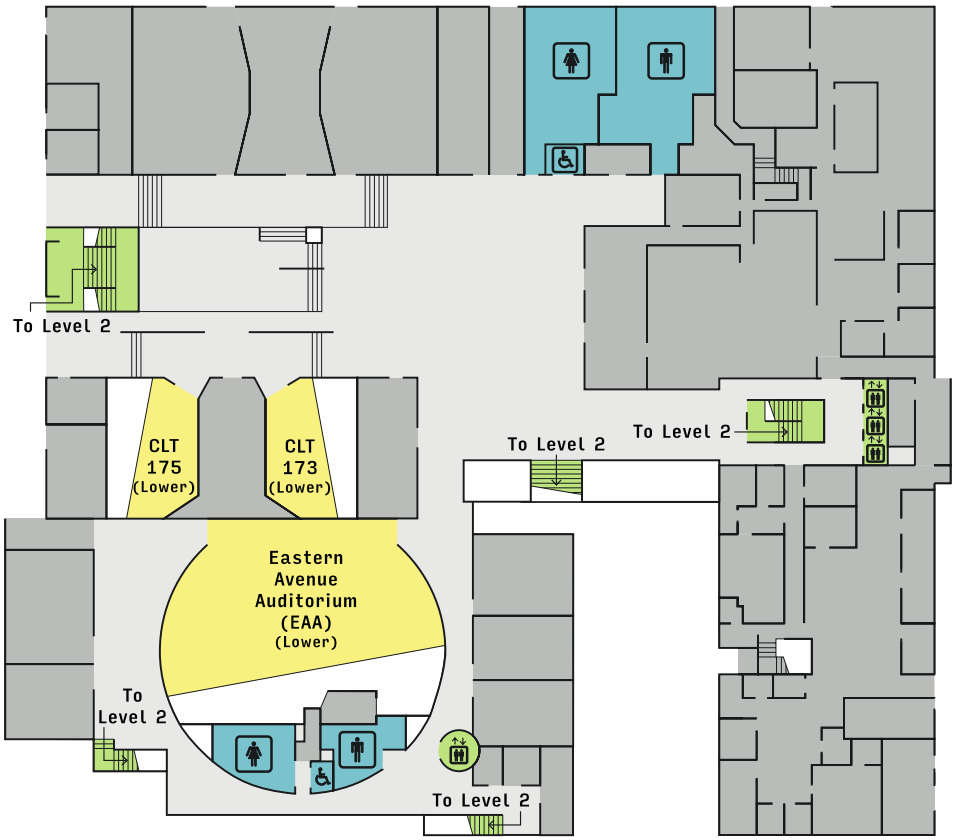
Maps

Camperdown/Darlington Campus of the University of Sydney

Eastern Avenue Auditorium and Theatre Complex and Carslaw Building

Level 1



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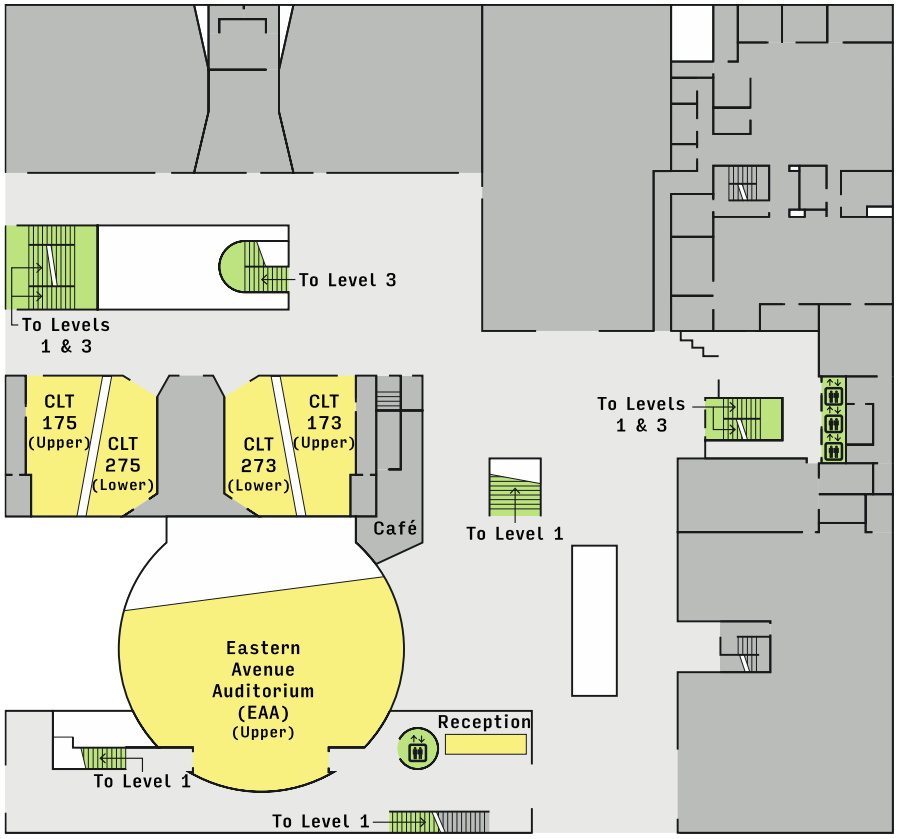
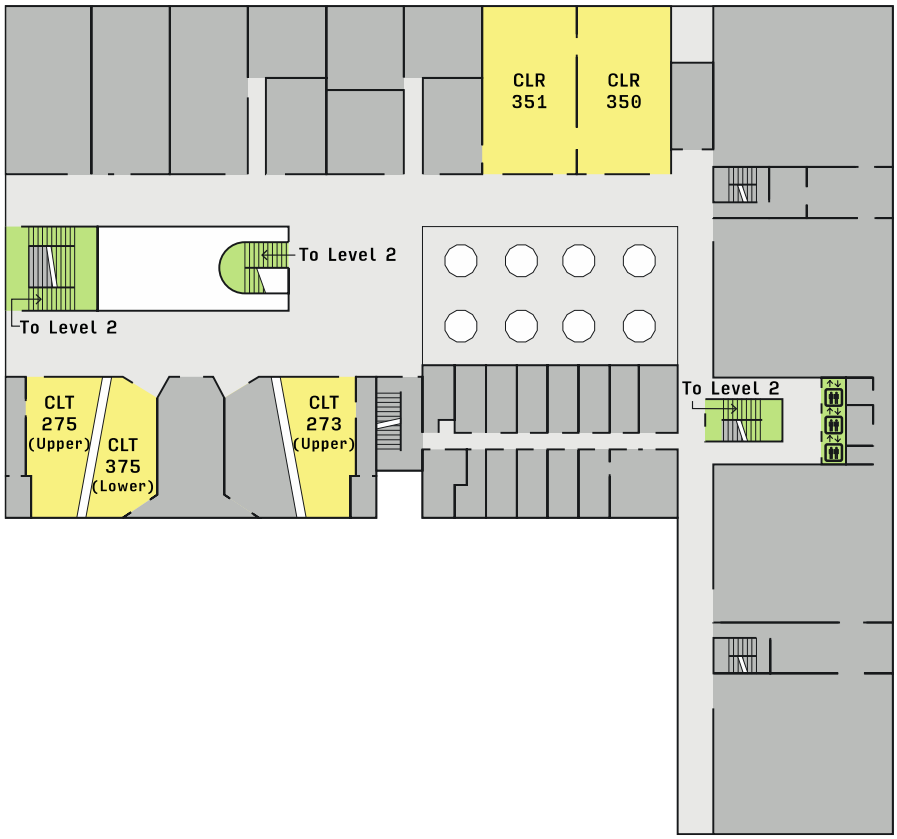


Level 3



Program Schedule

Monday 8th June, 2015

Session	Eastern Avenue Auditorium (EAA)	Carslaw Lecture Theatre 375 (CLT375)	Carslaw Lecture Theatre 273 (CLT273)	Carslaw Lecture Theatre 275 (CLT275)	Carslaw Lecture Room 350 (CLR350)	Carslaw Lecture Room 351 (CLR351)
	Opening Ceremony (Eastern Avenue Auditorium)					
1	Topology and Shape Optimization 1	Topology and Shape Optimization 2	Design with Uncertainty 1	Micro- and Nano-Structural Materials 1	Automotive Engineering 1	Mechanical Engineering 1
2	Topology and Shape Optimization 3	Topology and Shape Optimization 4	Design with Uncertainty 2	Design Optimization in Multiscale Problems 1	Multidisciplinary Optimization 1	Mechanical Engineering 2
	Congress Reception (Sydney Harbour Cruise)					

Tuesday 9th June, 2015

Session	Eastern Avenue Auditorium (EAA)	Carslaw Lecture Theatre 375 (CLT375)	Carslaw Lecture Theatre 273 (CLT273)	Carslaw Lecture Theatre 275 (CLT275)	Carslaw Lecture Room 350 (CLR350)	Carslaw Lecture Room 351 (CLR351)
3	Topology and Shape Optimization 5	Topology and Shape Optimization 6	Design with Uncertainty 3	Design Optimization in Civil and Structural Engineering 1	Automotive Engineering 2	Aerospace Design Optimization 1
4		Topology and Shape Optimization 7	Robust and Reliability-Based Design Optimization 1	Sensitivity Analysis Methods and Applications	Micro- and Nano-Structural Materials 2	Mechanical Engineering 3
5	Topology and Shape Optimization 8	Topology and Shape Optimization 9	Topology and Shape Optimization 10	Design of Composite Materials 1	Topology and Shape Optimization 11	Approximations with Surrogates or Metamodels 1
	General Assembly (Eastern Avenue Auditorium)					

Wednesday 10th June, 2015

Session	Eastern Avenue Auditorium (EAA)	Carslaw Lecture Theatre 375 (CLT375)	Carslaw Lecture Theatre 273 (CLT273)	Carslaw Lecture Theatre 275 (CLT275)	Carslaw Lecture Room 350 (CLR350)	Carslaw Lecture Room 351 (CLR351)
6	Topology and Shape Optimization 12	Topology and Shape Optimization 13	Multidisciplinary Optimization 2	Design of Composite Materials 2	Optimization Algorithms 1	Approximations with Surrogates or Metamodels 2
	Poster Session (Eastern Avenue Foyer)					
7	Topology and Shape Optimization 14	Topology and Shape Optimization 15	Robust and Reliability-Based Design Optimization 2	Aerospace Design Optimization 2	Topology and Shape Optimization 16	Design Optimization in Civil and Structural Engineering 2
8	Design Optimization in Civil and Structural Engineering 3	Topology and Shape Optimization 17	Robust and Reliability-Based Design Optimization 3	Design Optimization in Multiscale Problems 2	Structural Optimization 1	Mechanical Engineering 4

Thursday 11th June, 2015

Session	Eastern Avenue Auditorium (EAA)	Carslaw Lecture Theatre 375 (CLT375)	Carslaw Lecture Theatre 173 (CLT173)	Carslaw Lecture Theatre 175 (CLT175)	Carslaw Lecture Room 350 (CLR350)	Carslaw Lecture Room 351 (CLR351)
9	Topology and Shape Optimization 18	Topology and Shape Optimization 19	Structural Optimization 2	Automotive Engineering 3	Large Scale and High Performance Computing	Aerospace Design Optimization 3
10	Topology and Shape Optimization 20	Topology and Shape Optimization 21	Topology and Shape Optimization 22	Topology and Shape Optimization 23	Multidisciplinary Optimization 3	Inverse Problems and Parametric Identification
11	Topology and Shape Optimization 24	Structural Optimization 3	Optimization Algorithms 2	Automotive Engineering 4	Multidisciplinary Optimization 4	
	State-of-the-Art Discussion (Eastern Avenue Auditorium)					
	Congress Dinner (The Great Hall)					

Notes

Opening Ceremony

Monday 8th June, 2015

10:00 – 10:30

Eastern Avenue Auditorium

Please join us for the Opening Ceremony, to be held at Eastern Avenue Auditorium

Chair **Professor Grant P. Steven**

Co-Chair, WCSMO-11

University of Sydney, Australia

Welcome Speech **Professor Ole Sigmund**

President, ISSMO

Technical University of Denmark, Denmark

Invited Opening Speech **Professor Mary O'Kane**

Chief Scientist & Engineer

New South Wales, Australia

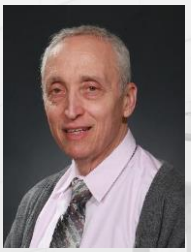
Executive Chairman

O'Kane Associates, Australia

Twenty Years and Outlook of WCSMO **Professor Raphael Haftka**

Past President, ISSMO

University of Florida, United States



Session 1

Monday 8th June, 2015

11:00 – 12:40

Room: EAA		Topology and Shape Optimization 1 (Level-Set Method)	
Chairs: Shinji Nishiwaki (Kyoto University, Japan) and **Yoon Young Kim** (Seoul National University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1148	**Shinji Nishiwaki** (Kyoto University, Japan)	**A level set based topology optimization method for micropump design utilizing induced-charge electro-osmosis** Ryuta Tanaka, Kentaro Yaji, Takayuki Yamada, Kazuhiro Izui, Shinji Nishiwaki*
11:20	1002	**Qi Xia** (Huazhong University of Science and Technology, China)	**A level set method for the representation of multiple types of boundaries and its application in structural shape and topology optimization** Qi Xia*, Michael Yu Wang, Tielin Shi
11:40	1024	**Peng Wei** (South China University of Technology, China)	**A Parameterized Level Set Method with Polygonal Finite Elements in Topology Optimization** Peng Wei*, Glaucio H. Paulino
12:00	1219	**Atsushi Kawamoto** (Toyota Central R&D Labs., Inc., Japan)	**Level set-based optimization using automated solutions of partial differential equations** Atsushi Kawamoto*, Tsuyoshi Nomura, Tsuguo Kondoh, Shinji Nishiwaki
12:20	1313	**Christopher James Brampton** (University of Bath, United Kingdom)	**A hole insertion method for sequential linear programming level-set topology optimisation** Christopher J. Brampton*, Peter D. Dunning, H. Alicia Kim

Room: CLT375		Topology and Shape Optimization 2	
Chairs: Nam H. Kim (University of Florida, United States) and **Shintaro Yamasaki** (Osaka University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1231	**Eddie Wadbro** (Umeå University, Sweden)	**Fast evaluation of quasi-arithmetic mean based filters for topology optimization** Eddie Wadbro*, Linus Hägg
11:20	1272	**Kirill A. Balunov** (Central Aerohydrodynamic Institute (TsAGI), Russia)	**Method of Variable Transformation for Topology Optimization with Clear Boundary Shape** Vladimir V. Uskov, Kirill A. Balunov*
11:40	1297	**Shintaro Yamasaki** (Osaka University, Japan)	**Applications of a consistent grayscale-free topology optimization method to industrial design problems** Shintaro Yamasaki*, Atsushi Kawamoto, Tsuyoshi Nomura, Kikuo Fujita
12:00	1387	**Xiaobo Yu** (Defence Science and Technology Organisation, Australia)	**A new mesh evolution algorithm to enable improved rework shape optimisation of complex 3-D structures** Xiaobo Yu*
12:20	1401	**Kai-Uwe Bletzinger** (Technische Universität München, Germany)	**Form finding by shape optimization with the Vertex Morphing Method – About the equivalence of sensitivity filtering and standard spline models** Kai-Uwe Bletzinger*, Majid Hojjat, Electra Stavropoulou

Room: CLT273		Design with Uncertainty 1	
Chairs: Byeng D. Youn (Seoul National University, South Korea) and **Hyunseok Oh** (Seoul National University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1085	**Loïc Brevault** (Onera - The French Aerospace Lab, France)	**Multi-level hierarchical MDO formulation with functional coupling satisfaction under uncertainty, application to sounding rocket design** Loïc Brevault*, Mathieu Balesdent, Nicolas Bérend, Rodolphe Le Riche
11:20	1236	**Hyunseok Oh** (Seoul National University, South Korea)	**Statistical Model Calibration of Lifetime Models with Failure and Censored Life Testing Data** Hyunseok Oh*, Hsiu-Ping Wei, Bongtae Han, Byeng D. Youn
11:40	1269	**Heonjun Yoon** (Seoul National University, South Korea)	**System reliability analysis of piezoelectric energy harvester under various physical uncertainties** Heonjun Yoon*, Byeng D. Youn, Heung S. Kim
12:00	1015	**Kemin Zhou** (Huaqiao University, China)	**Topology Optimization of Truss-Like Continuum under Uncertain Load** Kemin Zhou*
12:20	1190	**Makoto Yamakawa** (Tokyo Denki University, Japan)	**Validation of robust design with the k-th order statistics by structural reliability index** Makoto Yamakawa*, Makoto Ohsaki

Room: CLT275		Micro- and Nano-Structural Materials 1	
Chairs: Erik Lund (Aalborg University, Denmark) and **Jianbin Du** (Tsinghua University, China)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1078	**Jin-Xing Shi** (Toyota Technological Institute, Japan)	**Shape Optimum Design of Graphene Sheets** Jin-Xing Shi*, Masatoshi Shimoda
11:20	1368	**Hong-Lae Jang** (Seoul National University, South Korea)	**Design Sensitivity Analysis of Molecular Dynamics Considering NVT Ensemble** Hong-Lae Jang*, Hyun-Seok Kim, Jae-Hyun Kim, Song-Hyun Cha, Youmie Park, Seonho Cho
11:40	1064	**Jianbin Du** (Tsinghua University, China)	**Reliability-based microstructural topology design with respect to vibro-acoustic criteria** Jianbin Du*, Chuangchuang Sun
12:00	1092	**Kaveh Amouzgar** (Jönköping University, Sweden)	**Multi-objective optimization of material model parameters of an adhesive layer by using SPEA2** Kaveh Amouzgar*, Mirza Cenanovic, Kent Salomonsson
12:20	1353	**Seung-Hyun Ha** (Korea Maritime and Ocean University, South Korea)	**Design and Simulation for 3-D Woven Lattice Structures** Seung-Hyun Ha*, Longyu Zhao, Yong Zhang, Stephen Ryan, Keith Sharp, Kevin Hemker, Tim Weihs, James Guest

Room: CLR350		Automotive Engineering 1 (Crashworthiness I)	
Chairs: Gengdong Cheng (Dalian University of Technology, China) and **Shujuan Hou** (Hunan University, China)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1033	**Youngmyung Lee** (Hanyang University, South Korea)	**Crash Optimization of Automobile Frontal and Side Structures Using Equivalent Static Loads** Youngmyung Lee*, Jin-Seok Ahn, Gyung-Jin Park
11:20	1203	**Ping Zhu** (Shanghai Jiao Tong University, China)	**Multidisciplinary optimization on auto-body lightweight design using modified particle swarm optimizer** Zhao Liu, Ping Zhu*, Wei Chen, Ren-Jye Yang
11:40	1047	**Shujuan Hou** (Hunan University, China)	**Study on Energy Absorption Characteristics of Corrugated Sandwich Panels** Shujuan Hou*, Xu Han, Qing Li
12:00	1167	**Laurent Genest** (LTDS, Ecole Centrale de Lyon & Renault S.A.S., France)	**Shape optimization method for crashworthiness design based on Equivalent Static Loads concept** Laurent Genest*, Louis Jézéquel, Frédéric Gillot, Frédéric Mercier
12:20	1036	**Siliang Zhang** (Pan Asia Technical Automotive Center, China)	**Adaptive multi-point sequential sampling methodology for highly nonlinear automotive crashworthiness design problems** Siliang Zhang*, Zhengchao Song, Guohong Shi, Rongying Qiu

Room: CLR351		Mechanical Engineering 1 (Compliant Mechanisms)	
Chairs: Ming Zhou (Altair Engineering, United States) and **Jaewook Lee** (Korea Aerospace University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1212	**Jaewook Lee** (Korea Aerospace University, South Korea)	**Topology optimization of vibration energy harvesters using electromagnetic induction** Jaewook Lee*, Sang Won Yoon
11:20	1140	**Jong Ho Kim** (Korea Advanced Institute of Science and Technology, South Korea)	**Dual-mode Operation of the Finger-type Manipulator Based on Distributed Actuation Mechanism** Jong Ho Kim*, Young June Shin, Sung-Hwan Kim, In Gwun Jang
11:40	1451	**Masakazu Kobayashi** (Toyota Technological Institute, Japan)	**Optimal design of a wheelchair suspension based on a compliant mechanism** Masakazu Kobayashi*
12:00	1089	**Emmanuel Tromme** (University of Liege, Belgium)	**A level set approach for the structural optimization of flexible mechanisms** Emmanuel Tromme*, Daniel Tortorelli, Olivier Bruls, Pierre Duysinx
12:20	1023	**Jun Zou** (Nanjing University of Aeronautics and Astronautics, China)	**A Sensitivity-based Coordination Method for Optimization of Product Families** Jun Zou*, Wei-Xing Yao, Jun-Feng Zheng

Session 2

Monday 8th June, 2015

14:00 – 16:00

Room: EAA		Topology and Shape Optimization 3 (Level-Set/Explicit Method)	
Chairs: James K. Guest (Johns Hopkins University, United States) and **Xu Guo** (Dalian University of Technology, China)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1283	**Xu Guo** (Dalian University of Technology, China)	**Doing Topology Optimization Explicitly and Geometrically—A New Moving Morphable Components Based Framework** Xu Guo*, Weisheng Zhang, Jian Zhang, Wenliang Zhong
14:20	1270	**Yuki Sato** (Kyoto University, Japan)	**Exploring the Pareto frontier in level set-based topology optimization** Yuki Sato*, Kazuhiro Izui, Takayuki Yamada, Shinji Nishiwaki
14:40	1284	**Weisheng Zhang** (Dalian University of Technology, China)	**An explicit feature control approach in structural topology optimization** Weisheng Zhang*, Xu Guo, Wenliang Zhong
15:00	1431	**Masaki Otomori** (AISIN AW CO., LTD., Japan)	**Level set-based topology optimization for the design of optical hyperlens** Masaki Otomori*, Kei Uenishi, Takayuki Yamada, Kazuhiro Izui, Shinji Nishiwaki

Room: CLT375		Topology and Shape Optimization 4 (Phononics/Photonics/Plasmonics)	
Chairs: Emílio Carlos Nelli Silva (University of São Paulo, Brazil) and **Xiaodong Huang** (RMIT University, Australia)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1038	**Saeid Hedayatrasa** (University of South Australia, Australia)	**Novel approach in topology optimization of porous plate structures for phononic bandgaps of flexural waves** Saeid Hedayatrasa*, Kazem Abhary, Mohammad Uddin, Ching-Tai Ng
14:20	1065	**Fei Meng** (RMIT University, Australia)	**A new topology optimization algorithm for photonic band gap structures** Fei Meng*, Xiaodong Huang, Baohua Jia
14:40	1066	**Yangfan Li** (RMIT University, Australia)	**Topology optimization of two-dimensional phononic band gap crystals based on BESO methods** Yangfan Li*, Xiaodong Huang, Fei Meng, Shiwei Zhou
15:00	1202	**Masayoshi Satake** (Nippon Soken Inc., Japan)	**Shape optimization of waveguide cut-off filter** Masayoshi Satake*, Hideyuki Azegami

Room: CLT273		Design with Uncertainty 2	
Chairs: Wei Chen (Northwestern University, United States) and **Ikjin Lee** (Korea Advanced Institute of Science and Technology, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1226	**Byeng D. Youn** (Seoul National University, South Korea)	**Model refinement for fracture failure prediction of smartphone LCD with unrecognized blind uncertainty** Hyunseok Oh, Jisun Kim, Jungho Park, Byeng D. Youn*, Byung C. Jung
14:20	1189	**Ikjin Lee** (Korea Advanced Institute of Science and Technology, South Korea)	**Enhanced second-order reliability method and stochastic sensitivity analysis using importance sampling** Jongmin Lim, Byungchai Lee, Ikjin Lee*
14:40	1224	**Makoto Ito** (Osaka Prefecture University, Japan)	**Parameter estimation method using Bayesian statistics considering uncertainty of information for RBDO** Makoto Ito*, Nozomu Kogiso
15:00	1233	**Jaehyeok Doh** (Yonsei University, South Korea)	**Reliability Based Design Optimization Using Bayesian Reliability Neural Networks** Jaehyeok Doh*, Jongsoo Lee

Room: CLT275		Design Optimization in Multiscale Problems 1	
Chairs: H. Alicia Kim (University of Bath, United Kingdom) and **Liang Xia** (Sorbonne universités, Université de technologie de Compiègne, France)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1142	**Gengdong Cheng** (Dalian University of Technology, China)	**Two-scale design optimization of bending plate made of lattice or foam material subject to buckling constraint** Gengdong Cheng*, Jun Yan, Liang Xu
14:20	1019	**Peter D. Dunning** (University of Bath, United Kingdom)	**Multiscale topology optimization using constraint coordination** Peter D. Dunning*, H. Alicia Kim
14:40	1118	**Xuan Liang** (Tsinghua University, China)	**Integrated multi-scale vibro-acoustic topology optimization of structure and material** Xuan Liang*, Jianbin Du
15:00	1397	**Liang Xia** (Sorbonne universités, Université de technologie de Compiègne, France)	**Multiscale structural topology optimization** Liang Xia*, Piotr Breitkopf
15:20	1328	**Thomas Guess** (University of Erlangen-Nürnberg, Germany)	**Coupled Two-Scale Material Optimization for Lattice Structures using different upscaling techniques** Thomas Guess*, Michael Stingl, Fabian Wein

Room: CLR350		Multidisciplinary Optimization 1 (Biomedical I)	
Chairs: Vassili Toropov (Queen Mary University of London, United Kingdom) and **Yuhang Chen** (Heriot-Watt University, United Kingdom)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1179	**Yuhang Chen** (Heriot-Watt University, United Kingdom)	**Fluid-structure interaction and Optimization-based Approach for Homogenization of Soft Tissue Viscoelasticity** Behnam Esfandiar Jahromi, Javier Palacio-Torralba, Frank Yntema, Robert L. Reuben, Yuhang Chen*
14:20	1323	**Anna-Lena Beger** (RWTH Aachen University, Germany)	**Tailored natural components – functional geometry and topology optimization of technical grown plants** Anna-Lena Beger*, Manuel Löwer, Jörg Feldhusen, Jürgen Prell, Alexandra Wormit, Björn Usadel, Christoph Kämpfer, Thomas-Benjamin Seiler, Henner Hollert, Franziska Moser, Martin Trautz
14:40	1386	**Andrew D. Cramer** (University of Queensland, Australia)	**Microstructure interpolation for macroscopic design with application to bone prosthetics** Andrew D. Cramer*, Vivien J. Challis, Anthony P. Roberts
15:00	1161	**Dongjin Kim** (Korea Aerospace University, South Korea)	**The electrode shape optimization method for cell sorting applications based on dielectrophoresis** Dongjin Kim*, Yiseul Kim, Byungkyu Kim, Jaewook Lee
15:20	1456	**Sriram Tammareddi** (University of Sydney, Australia)	**Robust Multiobjective Optimization of Coronary Stents** Sriram Tammareddi*, Guangyong Sun, Qing Li

Room: CLR351		Mechanical Engineering 2 (Plastoelasticity)	
Chairs: Niels Leergaard Pedersen (Technical University of Denmark, Denmark) and **Koetsu Yamazaki** (Kanazawa University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1391	**Koetsu Yamazaki** (Kanazawa University, Japan)	**Earing Minimization with Segmented and Variable Blank Holder Force during Deep Drawing Process for Circular Cup Forming** Koetsu Yamazaki*, Shinya Makino, Jing Han, Hiroaki Uchida
14:20	1409	**Jing Han** (Universal Can Corporation, Japan)	**Optimization of Pulsating Blank Holder Force for Deep Drawing of Cylindrical Cups** Jing Han*, Shinji Natsume, Satoshi Kitayama, Koetsu Yamazaki, Hiroaki Uchida
14:40	1453	**Yi-min Deng** (Ningbo University, China)	**Optimization of packing pressure profile for minimization of multiple injection molding defects** Yi-min Deng*, Guo-fu Li
15:00	1067	**Niels Leergaard Pedersen** (Technical University of Denmark, Denmark)	**Optimization of contact stress distribution in interference fit** Niels Leergaard Pedersen*
15:20	1382	**Rebecca Evans** (Defence Science and Technology Organisation, Australia)	**Transfer effects for stress optimal shapes between design codes and from design to NC manufacture** Rebecca Evans*, Xiaobo Yu, Manfred Heller

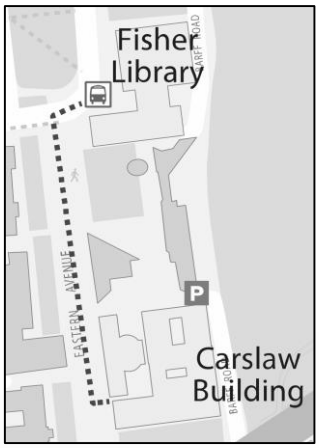
Notes

Congress Reception

Monday 8th June, 2015

15:45 – 20:00

Please join us for the Congress Reception, and see the spectacular lights of the Vivid Light, Music & Ideas Festival 2015, on a Sydney Harbour Cruise



Attendees should make their way to the bus stop at the front of Fisher Library as soon as Session 2 is complete. DO NOT BE LATE. Buses will depart from Fisher Library at 15:45 and arrive at Star City Wharf. Attendees will then be guided to board the vessel. The cruise will begin at 16:30, and finish around 19:30. Attendees will be dropped off at Circular Quay.

Session 3

Tuesday 9th June, 2015

09:00 – 10:40

Room: EAA		Topology and Shape Optimization 5 (Stress Criteria)	
Chairs: Oded Amir (Technion - Israel Institute of Technology, Israel) and **Pierre Duysinx** (University of Liege, Belgium)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1242	**Pierre Duysinx** (University of Liege, Belgium)	**Topology optimization of mechanical and aerospace components subject to fatigue stress constraints** Pierre Duysinx*, Maxime Collet, Simon Bauduin, Emmanuel Tromme, Lise Noel, Matteo Bruggi
09:20	1145	**Yusuke Naritomi** (Allied Engineering Corporation, Japan)	**Shape optimization for minimizing the KS function of von Mises stress using shape derivative of domain integral type** Yusuke Naritomi*, Hideyuki Azegami
09:40	1057	**Cesar Yukishigue Kiyono** (University of São Paulo, Brazil)	**Topology optimisation for stress-based problems applied to laminated composite structures** Cesar Yukishigue Kiyono*, Junuthula N. Reddy, E. C. N. Silva
10:00	1288	**Oded Amir** (Technion - Israel Institute of Technology, Israel)	**An alternative approach for satisfying stress constraints in continuum topology optimization using nonlinear material modeling** Oded Amir*
10:20	1274	**Seongyeol Goo** (Gwangju Institute of Science and Technology, South Korea)	**Structural topology optimization with eigenvalue and stress constraints using ANSYS** Seongyeol Goo*, Jaeyub Hyun, Jasoon Jung, Semyung Wang

Room: CLT375		Topology and Shape Optimization 6	
Chairs: Julian A. Norato (University of Connecticut, United States) and **Sawekchai Tangaramvong** (University of New South Wales, Australia)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1419	**Sawekchai Tangaramvong** (University of New South Wales, Australia)	**Structural Optimization under Complementarity Constraints** Sawekchai Tangaramvong*, Francis Tin-Loi
09:20	1048	**Julian A. Norato** (University of Connecticut, United States)	**A geometry projection method for continuum-based topology optimization of frames with member length constraints** Julian A. Norato*, Bryan K. Bell, Daniel A. Tortorelli
09:40	1285	**Jian Zhang** (Dalian University of Technology, China)	**The Integration of Explicit and Implicit Models in Topology Optimization** Jian Zhang*, Xu Guo, Weisheng Zhang, Wenliang Zhong
10:00	1441	**Emiel Anton Van De Ven** (Technical University Delft, Netherlands)	**Topology Optimization of a Transient Thermo-Mechanical Problem using Material Penalization** Emiel Anton van de Ven*, Evert Hooijkamp, Matthijs Langelaar, Fred van Keulen
10:20	1156	**Jung Jin Kim** (Korea Advanced Institute of Science and Technology, South Korea)	**Localized resolution enhancement of skeletal images based on topology optimization** Jung Jin Kim*, In Gwun Jang

Room: CLT273		Design with Uncertainty 3	
Chairs: Joo Ho Choi (Korea Aerospace University, South Korea) and **Palaniappan Ramu** (Indian Institute of Technology, India)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1407	**Joo Ho Choi** (Korea Aerospace University, South Korea)	**Parameter estimation of the electrochemical model in Li-ion battery with polynomial-based surrogate model** Joo Ho Choi*, Jaewook Lee, Wooseok Sung
09:20	1423	**Hee Seong Kim** (Korea Aerospace University, South Korea)	**A Study on the Statistical Calibration and Validation of Computational Model of Pyrotechnically Actuated Devices** Hee Seong Kim*, Joo Ho Choi
09:40	1227	**Yi Zhang** (National University of Defense Technology, China)	**A Sequential Optimization and Mixed Uncertainty Analysis Method Based on Taylor Series Approximation** Xiaoqian Chen, Wen Yao, Yiyong Huang, Yi Zhang*
10:00	1232	**Palaniappan Ramu** (Indian Institute of Technology, India)	**High reliability estimation using CVaR+** Palaniappan Ramu*
10:20	1240	**Norio Takeda** (Hitachi Research Laboratory, Hitachi, Ltd., Japan)	**Surrogate Models for Data-Inspired Reliability Design** Norio Takeda*

Room: CLT275		Design Optimization in Civil and Structural Engineering 1	
Chairs: Bo Wang (Dalian University of Technology, China) and **Makoto Ohsaki** (Hiroshima University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1040	**Makoto Ohsaki** (Kyoto University, Japan)	**Optimization of flexible supports for seismic response reduction of long-span structures** Makoto Ohsaki*, Osamu Iwatsuki, Yuji Miyazu, Seita Tsuda
09:20	1071	**Alexis Tugilimana** (Université libre de Bruxelles, Belgium)	**Structural optimization of standardized trusses by dynamic grouping of modules** Alexis Tugilimana*, Rajan Filomeno Coelho, Ashley P. Thrall
09:40	1339	**Kok-Hon Chew** (Nanyang Technological University, Singapore)	**Fatigue Sensitivity Analysis of Offshore Wind Turbine Structures** Kok-Hon Chew*, Michael Muskulus, Srikanth Narasimalu, Kang Tai, E. Y. K. Ng
10:00	1413	**Bo Wang** (Dalian University of Technology, China)	**Diverse Competitive Designs for SIMP-based Topology Optimization** Bo Wang*, Yan Zhou, Yiming Zhou
10:20	1083	**Xin Zhao** (Tongji University, China)	**Optimization of wind-induced acceleration of super tall buildings by modal shape updating** Xin Zhao*, Xiang Jiang

Room: CLR350		Automotive Engineering 2 (Crashworthiness II)	
Chairs: Ping Zhu (Shanghai Jiao Tong University, China) and **Axel Schumacher** (University of Wuppertal, Germany)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1114	**Weigang Zhang** (Hunan University, China)	**Multi-Parameter Optimization Study on the Crashworthiness Design of a Vehicle by Using Global Sensitivity Analysis and Dynamic Metamodel** Weigang Zhang*, Yang Zhang, Tao Ma, Ting Tang
09:20	1194	**Insik Han** (LG Electronics, South Korea)	**TV packaging optimization of the frontal drop impact using equivalent static loads** Insik Han*, Youngmyung Lee, Gyung-Jin Park
09:40	1032	**Jianguang Fang** (University of Sydney, Australia)	**Multiobjective optimization of multi-cell tubes with functional graded thickness** Jianguang Fang*, Yunkai Gao, Guangyong Sun, Qing Li
10:00	1177	**Axel Schumacher** (University of Wuppertal, Germany)	**Combining state of the art meta-models for predicting the behaviour of non-linear crashworthiness structures for shape and sizing optimizations** Axel Schumacher*, Christopher Ortmann
10:20	1049	**Libin Duan** (Hunan University, China)	**Lightweight design of vehicle structure with tailor rolled blank under crashworthiness** Libin Duan*, Guangyong Sun, Junjia Cui, Tao Chen, Guangyao Li

Room: CLR351		Aerospace Design Optimization 1	
Chairs: G. K. Ananthasuresh (Indian Institute of Science, Bengaluru, India) and **Timothy Ryan Brooks** (University of Michigan, United States)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1184	**Timothy Ryan Brooks** (University of Michigan, United States)	**High-fidelity Structural Optimization of a Tow-steered Composite Wing** Timothy Brooks*, John T. Hwang, Graeme J. Kennedy, Joaquim R. R. A. Martins
09:20	1218	**G. K. Ananthasuresh** (Indian Institute of Science, Bengaluru, India)	**Topology and Size Optimization of Modular Ribs in Aircraft Wings** A. Rinku, G. K. Ananthasuresh*
09:40	1238	**Jaehyun Yoon** (Yonsei University, South Korea)	**Optimal Blade Design of Quad-Rotor Air Vehicle Considering Hovering Thrust and Position Disturbance** Jaehyun Yoon*, Jongsoo Lee
10:00	1164	**Jianquan Ge** (National University of Defense Technology, China)	**Research on Integrated Design and Optimization for Hypersonic-Glide Vehicle** Jianquan Ge*, Longyun Chen, Bin Zhang, Lei Wang
10:20	1450	**Shenyan Chen** (Beihang University, China)	**Structural Design and Topology Optimization of a University Micro-satellite** Shenyan Chen*, Jing Guo

Session 4

Tuesday 9th June, 2015

11:00 – 12:40

Room: CLT375		Topology and Shape Optimization 7 (Metamaterials I)	
Chairs: Sandro Luis Vatanabe (Polytechnic School of the University of São Paulo, Brazil) and **Garuda Fujii** (Shinshu University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1429	**Scott Townsend** (University of Sydney, Australia)	**Engineering Negative Refractive Index Materials via Topology Optimization** Scott Townsend*, Shiwei Zhou, Qing Li
11:20	1371	**Rasmus Ellebæk Christiansen** (Technical University of Denmark, Denmark)	**Creating Materials with Negative Refraction Index using Topology Optimization** Rasmus Ellebæk Christiansen*, Ole Sigmund
11:40	1144	**Garuda Fujii** (Shinshu University, Japan)	**Topology optimized carpet cloak by means of a level set based topology optimization** Garuda Fujii*, Masayuki Nakamura
12:00	1127	**Namjoon Heo** (Yonsei University, South Korea)	**Structural optimization for cloaking effect using dielectric material based on the phase field method** Namjoon Heo*, Jeonghoon Yoo
12:20	1308	**Sandro Luis Vatanabe** (Polytechnic School of University of São Paulo, Brazil)	**Design of acoustic cloaking by using topology optimization and waveguide concept** Sandro Luis Vatanabe*, Emílio Carlos Nelli Silva

Room: CLT273		Robust and Reliability-Based Design Optimization 1	
Chairs: Byeng D. Youn (Seoul National University, South Korea) and **Po Ting Lin** (Chung Yuan Christian University, Taiwan)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1200	**Kyung K. Choi** (The University of Iowa, United States)	**Reliability-Based Design Optimization of Wind Turbine Blades for Fatigue Life under Wind Load Uncertainty** Weifei Hu, Kyung K. Choi*, Hyunkyoo Cho, Nicholas J. Gaul, Olesya I. Zhupanska
11:20	1211	**Po Ting Lin** (Chung Yuan Christian University, Taiwan)	**Utilization of Gaussian Kernel Reliability Analyses in the Gradient-based Transformed Space for Design Optimization with Arbitrarily Distributed Design Uncertainties** Po Ting Lin*
11:40	1316	**Samy Missoum** (University of Arizona, United States)	**Reliability-based Design Optimization of Nonlinear Energy Sinks** Ethan Boroson, Samy Missoum*
12:00	1356	**Woochul Lim** (Hanyang University, South Korea)	**Reliability-Based Design Optimization of BIW Considering Variable Uncertainty of Thickness** Woochul Lim*, Junyong Jang, Shinyu Kim, Tae Hee Lee, Jungho Kim, Kyungwon Lee, Changkun Lee, Yongsuk Kim
12:20	1153	**Xiaoke Li** (Huazhong University of Science & Technology, China)	**A Modified Adaptive Sampling Method for Reliability-Based Design Optimization Using SVM Model** Xiaoke Li*, Haobo Qiu, Liang Gao, Wei Li

Room: CLT275		Sensitivity Analysis Methods and Applications 1	
Chairs: Ramana V. Grandhi (Wright State University, United States) and **Narayanan Pagaldipti** (Altair Engineering, Inc., United States)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1412	**Ramana V. Grandhi** (Wright State University, United States)	**Sensitivity Analysis of Fluid-Structure Interactions Simulated With Immersed Boundary Approach** Ramana V. Grandhi*, Koorosh Gobal
11:20	1054	**Jacob Oest** (Aalborg University, Denmark)	**Gradient based structural optimization with fatigue constraints of jacket structures for offshore wind turbines** Jacob Oest*, Lars Christian Terndrup Overgaard, Erik Lund
11:40	1099	**Rahmetalla Nazzeri** (Technical University of Braunschweig, Germany)	**Assessing sensitivities of maneuver load alleviation parameters on buckling reserve factors using surrogate model based extended Fourier Amplitude Sensitivity Test** Rahmetalla Nazzeri*, Frank Lange, Matthias Haupt, Christophe Sebastien
12:00	1439	**Narayanan Pagaldipti** (Altair Engineering, Inc., United States)	**Sensitivity and Optimization of Responses from Nonlinear Analyses** Narayanan Pagaldipti*, Shaobin Liu, Raphael Fleury
12:20	1195	**Dong Wang** (Northwestern Polytechnical University, China)	**Sensitivity Analysis of Structural Response to External Load Position** Dong Wang*

Room: CLR350		Micro- and Nano-Structural Materials 2	
Chairs: Michael Yu Wang (National University of Singapore, Singapore) and **Jun Yan** (Dalian University of Technology, China)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1158	**Michael Yu Wang** (National University of Singapore, Singapore)	**Optimal Design and Evaluation of Cantilever Probe for Multifrequency Atomic Force Microscopy** Jiandong Cai, Qi Xia, Yangjun Luo, Michael Yu Wang*, Li Zhang
11:20	1061	**Dingjie Lu** (RMIT University, Australia)	**Surface Effect on Nanoscale Structure: A Numerical Study in terms of Young-Laplace Equation** Dingjie Lu*, Mike Xie, Qing Li, Xiaodong Huang, Shiwei Zhou
11:40	1321	**Floris C. M. Van Kempen** (Delft University of Technology, Netherlands)	**Multiphysics design optimization of continuous flow microreactors** Floris C. M. van Kempen*, Matthijs Langelaar, Michiel Kreutzer, Fred van Keulen
12:00	1426	**Suguang Dou** (Technical University of Denmark, Denmark)	**Two methods for gradient-based optimization in nonlinear structural dynamics** Suguang Dou*, Jakob S. Jensen
12:20	1116	**Jun Yan** (Dalian University of Technology, China)	**Concurrent Multi-scale Optimization of Composite Frame Structure** Jun Yan*, Zunyi Duan, Guozhong Zhao

Room: CLR351		Mechanical Engineering 3 (Mechanical Design)	
Chairs: Weihua Li (University of Wollongong, Australia) and **Paolo Guarneri** (Technical University of Cluj-Napoca, Romania)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1093	**Kangwon Lee** (Yonsei University, South Korea)	**Three-dimensional Light Weight Design of Robot Parts Using the Topology Optimization Method** Kangwon Lee*, Chan-Yul Jung, Seung-Jong Kim, Takayuki Yamada, Kazuhiro Izui, Shinji Nishiwaki, Jeonghoon Yoo
11:20	1110	**Mingzi Zhang** (Tohoku University, Japan)	**Manufacture-Oriented Design Optimization for a Flow Diverter Stent Using Lattice Boltzmann Method and Simulated Annealing** Mingzi Zhang*, Hitomi Anzai, Bastien Chopard, Makoto Ohta
11:40	1131	**Paolo Guarneri** (Technical University of Cluj-Napoca, Romania)	**Tradeoff exploration in decomposition-based optimization** Paolo Guarneri*, Margaret M. Wiecek
12:00	1101	**Weihua Li** (University of Wollongong, Australia)	**Optimal design of a double coil magnetorheological fluid damper with various piston profiles** Guoliang Hu, Zheng Xie, Weihua Li*
12:20	1350	**Xiaohong Ding** (University of Shanghai for Science and Technology, China)	**Design Optimization Method of Machine Tool Pedestal Structures** Xiaohong Ding*, Heng Zhang, Xiaohu Dong

Session 5

Tuesday 9th June, 2015

14:00 – 16:00

Room: EAA		**Topology and Shape Optimization 8 (Additive Manufacturing)**	
Chairs: Ming Zhou (Altair Engineering, United States) and **Akihiro Takezawa** (Hiroshima University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1293	**Ming Zhou** (Altair Engineering, United States)	**Lattice Structures for 3D-Printing** Ming Zhou*, Michael Bogomolny, Raphael Fleury
14:20	1125	**Akihiro Takezawa** (Hiroshima University, Japan)	**Porous metal by topology optimization and additive manufacturing** Akihiro Takezawa*, Makoto Kobashi, Yuichiro Koizumi, Mitsuru Kitamura
14:40	1432	**Christopher James Smith** (University of Sheffield, United Kingdom)	**Layout optimization of components suitable for additive manufacture** Christopher Smith*, Matthew Gilbert, Iain Todd
15:00	1103	**Ajit Panesar** (University of Nottingham, United Kingdom)	**Design optimization for multifunctional 3D printed structures with embedded functional systems** A. Panesar*, D. Brackett, I. Ashcroft, R. Wildman, R. Hague
15:20	1373	**Andrew T. Gaynor** (Johns Hopkins University, United States)	**Eliminating Support Material in Additive Manufacturing: A Projection-Based Approach for Maximum Overhang Constraints** Andrew T. Gaynor*, James K. Guest
15:40	1336	**Jannis Greifenstein** (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)	**Design optimization with anisotropic materials in the context of additive manufacturing** Jannis Greifenstein*, Michael Stingl

Room: CLT375		**Topology and Shape Optimization 9 (Multi-Materials/Multi-Components)**	
Chairs: Kurt Maute (University of Colorado Boulder, United States) and **Yoon Young Kim** (Seoul National University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1073	**Kurt Maute** (University of Colorado Boulder, United States)	**On the influence of interface models on the optimum layout of multi-component structures and material systems** Matthew Lawry, Reza Behrou, Kurt Maute*
14:20	1215	**Yoon Young Kim** (Seoul National University, South Korea)	**Topology optimization of 3D suspension linkage system of an automobile by using work transmittance efficiency based mechanism synthesis formulation** Yoon Young Kim*, Suh In Kim, Byungseong Ahn, Seok Won Kang, Yong-Sub Yi, Joonhong Park
14:40	1220	**Seok Won Kang** (Seoul National University, South Korea)	**Topology Optimization of Planar Linkage Systems having Various Joint Types** Seok Won Kang*, Suh In Kim, Yoon Young Kim
15:00	1221	**Byungseong Ahn** (Seoul National University, South Korea)	**Simultaneous design of a loading location and structure by topology optimization** Sung Kyu Kwak, Byungseong Ahn*, Suh In Kim, Yoon Young Kim
15:20	1012	**Anders Clausen** (Technical University of Denmark, Denmark)	**Topology optimization for coated structures and material interface problems** Anders Clausen*, Erik Andreassen, Ole Sigmund
15:40	1415	**James K. Guest** (Johns Hopkins University, United States)	**A Multi-Material Topology Optimization Algorithm for Continuum (and other) Structures** James K. Guest*

Room: CLT273		**Topology and Shape Optimization 10 (Piezoelectricity)**	
Chairs: José Miranda Guedes (Instituto Superior Técnico, Lisbon University, Portugal) and **Alberto Donoso** (University of Castilla – La Mancha, Spain)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1309	**José Miranda Guedes** (Instituto Superior Técnico, Lisbon University, Portugal)	**Piezoelectric Material Tailoring for Vibrations Energy Harvesters Power Optimization** Agostinho Martins Matos, José Miranda Guedes*, K. P. Jayachandran, H. C. Rodrigues
14:20	1115	**Xiaopeng Zhang** (Dalian University of Technology, China)	**Topology optimization of piezoelectric structures subjected to transient dynamic loads** Xiaopeng Zhang*, Zhan Kang
14:40	1332	**Mariana Moretti** (Polytechnic School of University of São Paulo, Brazil)	**Design of Functionally Graded Piezoactuator for transient reponse by means of gain velocity feedback control through Topology Optimization Method (TOM)** Mariana Moretti*, Emílio C. Nelli Silva
15:00	1241	**Alberto Donoso** (University of Castilla – La Mancha, Spain)	**Topology optimization of piezo modal transducers with null-polarity phases** Alberto Donoso*, Ole Sigmund
15:20	1290	**Ruben A. Salas** (Polytechnic School of University of São Paulo, Brazil)	**Topology Optimization Applied to the Dynamic Design of the Laminated Piezocomposites Structures (LAPS) Used for purposes of Energy Harvesting** Ruben A. Salas*, Emilio C. N. Silva, J. N. Reddy
15:40	1247	**David Ruiz** (University of Castilla – La Mancha, Spain)	**Optimal Design of Piezoelectric Transducers** David Ruiz*, A. Donoso, J. C. Bellido

Room: CLT275		Design of Composite Materials 1	
Chairs: Erik Lund (Aalborg University, Denmark) and **Pedro Gonçalves Coelho** (Universidade Nova de Lisboa, Portugal)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1128	**Erik Lund** (Aalborg University, Denmark)	**Filter Based Discrete Material and Thickness Optimization of Laminated Composite Structures** Erik Lund*, René Sørensen
14:20	1113	**Daniël M. J. Peeters** (Delft University of Technology, Netherlands)	**Structural approximations for composite optimisation** Daniël M. J. Peeters*, Mostafa M. Abdalla
14:40	1433	**Pedro Gonçalves Coelho** (Universidade Nova de Lisboa, Portugal)	**Convergence analysis of full elastic tensors to homogenization predictions in periodic composite material design** Pedro Gonçalves Coelho*, L. D. Amiano, J. M. Guedes, H. C. Rodrigues
15:00	1223	**Yan Zhang** (China Academy of Space Technology, China)	**Design and optimization of a variable stiffness composite laminate** Yan Zhang*, Fenfen Xiong
15:20	1342	**Markus E. Schatz** (TU Munich – Technische Universität München, Germany)	**Optimization of laminated structures considering manufacturing efforts** Markus E. Schatz*, Horst J. Baier
15:40	1424	**Haichao An** (Beihang University, China)	**Laminate Stacking Sequence Optimization Considering Multiple Structural Cases with Two-Level Approximations and GA** Haichao An*, Shenyan Chen, Hai Huang

Room: CLR350		Topology and Shape Optimization 11 (Metamaterials II)	
Chairs: Wei Chen (Northwestern University, United States) and **Takayuki Yamada** (Kyoto University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1331	**Wei Chen** (Northwestern University, United States)	**Characterization and Optimization of Quasi-Random Nanophotonic Structures with Intrinsic Robustness against Fabrication Defects** Shuangcheng Yu, Chen Wang, Zhen Jiang, Cheng Sun, Wei Chen*
14:20	1058	**Takayuki Yamada** (Kyoto University, Japan)	**Optimum design of periodic microstructures for minimal dispersive effects in wave propagation** Takayuki Yamada*, Grégoire Allaire, Kazuhiro Izui, Shinji Nishiwaki
14:40	1262	**Jaeyub Hyun** (Gwangju Institute of Science and Technology, South Korea)	**Design and Homogenization of the Acoustic Metamaterial using the Boundary Field Averaging & Its Applications** Jaeyub Hyun*, Semyung Wang
15:00	1254	**Jaesoon Jung** (Gwangju Institute of Science and Technology, South Korea)	**Topology optimization of membrane-type acoustic metamaterial for low frequency sound attenuation** Jaesoon Jung*, Jaeyub Hyun, Semyung Wang
15:20	1392	**Zhenyu Liu** (Changchun Institute of Optics, Fine Mechanics and Physics, China)	**Optimization of nano-photonic devices based on transformation optics method** Zhenyu Liu*, Yinghui Cao, Yongmin Liu
15:40	1198	**Kepeng Qiu** (Northwestern Polytechnical University, China)	**Optimization design of artificial electromagnetic metamaterials with perfect wave absorption** Kepeng Qiu*, Shuqi Feng, Fuli Zhang, Weihong Zhang, Zijun Liu

Room: CLR351		Approximations with Surrogates or Metamodels 1	
Chairs: Nam H. Kim (University of Florida, United States) and **Hu Wang** (Hunan University, China)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1056	**Raphael T. Haftka** (University of Florida, United States)	**Experience with Several Multi-fidelity Surrogate Frameworks** Chanyoung Park, Raphael T. Haftka*, Nam H. Kim
14:20	1457	**Vassili Toropov** (Queen Mary University of London, United Kingdom)	**Adaptive sub-space metamodel building for large-scale MDO problems with disparate discipline attributes** Jonathan Ollar, Vassili Toropov*, Royston Jones
14:40	1008	**Hu Wang** (Hunan University, China)	**Manifold multi-surrogate assisted firefly global optimization** Hu Wang*, Fang Ye, Enying Li, Guangyao Li
15:00	1027	**Laura Mainini** (Massachusetts Institute of Technology, United States)	**Data-driven dynamic structural assessment from sparse sensor data** Laura Mainini*, Karen Willcox
15:20	1051	**Zheng Li** (Dalian University of Technology, China)	**A multiple points Infill sampling criteria based on Kriging meta model** Zheng Li*, Shilun Ruan, Changyu Shen
15:40	1252	**Zongyu Wu** (National University of Defense Technology, China)	**A RBF neural network modeling method based on sensitivity analysis and Pareto law** Zongyu Wu*, Yong Chen, Wen Yao, Xiaoqian Chen

ISSMO/Springer Prize 2013

The ISSMO/Springer Prize for Young Scientist 2013 was awarded to:

Dr. Christopher J. Brampton

The Prize is awarded to Dr. Brampton for an excellent presentation and outstanding paper read at the ISSMO 10th World Congress of Structural and Multidisciplinary Optimization (WCSMO-10) held in Orlando, United States, May 2013

The presentation title is
"Optimization of Two Steered Fiber Orientation Using the Level Set Method"
Christopher J. Brampton and H. Alicia Kim

WCSMO-11 Early Career Researcher Fellowships

To expand the new generation of scientists in structural and multidisciplinary optimization research, up to 10 Congress Early Career Researcher (ECR) travel fellowships are awarded to those eligible participants who are current postgraduate students or postdocs (within five years of the PhD completion). The awards are decided by the selection panel within the WCSMO-11 Local Organizing Committee, chaired by Professor Yimin (Mike) Xie, RMIT University, Australia.

Guangyong Sun	Hunan University, China
Liang Xia	Sorbonne universités, Université de technologie de Compiègne, France
Mingdong Zhou	Technical University of Denmark, Denmark
David J. Munk	University of Sydney, Australia
Onur Deniz	Technische Universität Braunschweig, Germany
Hemant Kumar Singh	University of New South Wales, Australia
Saeid Hedayatrasa	University of South Australia, Australia
Yuqing Zhou	University of Michigan, United States
Loïc Brevault	Onera - The French Aerospace Lab, France
Meng Xu	Technical University of Cluj-Napoca, Romania

General Assembly

Tuesday 9th June, 2015

16:20 – 18:00

Eastern Avenue Auditorium

Please join us for the General Assembly, to be held at Eastern Avenue Auditorium

Agenda

1. President's report
2. Secretary General's report
3. Treasurer's report
4. SMO Editor's report
5. Election of ISSMO Executive Committee members (2015-2019)
6. ISSMO Springer prize and brief presentation by the recipient
7. Call for proposals for the WCSMO-11 ISSMO Springer prize
8. WCSMO-11 Congress Fellowship Award
9. Call for proposals for the WCSMO-12
10. Other business

Session 6

Wednesday 10th June, 2015

9:00 – 10:40

Room: EAA		Topology and Shape Optimization 12 (GA/Evolution)	
Chairs: Kiichiro Sawada (Kagoshima University, Japan) and **Kalyan Shankar Bhattacharjee** (University of New South Wales, Canberra, Australia)			
Time	**ID**	**Presenting Author**	**Title**
9:20	1079	**Kiichiro Sawada** (Kagoshima University, Japan)	**Topology optimizations of structures with inverse Fourier transform and real coded GA** Kiichiro Sawada*
9:40	1041	**Kalyan Shankar Bhattacharjee** (University of New South Wales, Canberra, Australia)	**A Novel Constraint Handling Strategy for Expensive Optimization Problems** Kalyan Shankar Bhattacharjee*, Tapabrata Ray
10:00	1257	**Yanjie Liu** (Beihang University, China)	**Stacking Sequence Optimization of Composite Corrugated Bearing Cylinder with Two-level Approximation and GA** Yanjie Liu*, Shenyan Chen, Haichao An, Hai Huang, Haiquan Ma, Feng Gao, Gang Bai
10:20	1123	**Xiaofang Shui** (Beihang University, China)	**Simultaneous Optimization of Stiffeners Distribution and Sizing using Two-Level Approximations and Genetic Algorithm** Shenyan Chen, Xiaofang Shui*

Room: CL375		Topology and Shape Optimization 13 (Thermofluids I)	
Chairs: Gil Ho Yoon (Hanyang University, South Korea) and **Daisuke Murai** (Toyota Central Research and Development Laboratories Institute, Japan)			
Time	**ID**	**Presenting Author**	**Title**
9:00	1265	**Renato Picelli** (University of Campinas, Brazil)	**Topology Optimization considering design-dependent Stokes flow loads** Renato Picelli*, William Martins Vicente, Renato Pavanello, Fred van Keulen
9:20	1276	**Kazuo Yonekura** (IHI Corporation, Japan)	**A topology optimization method for a flow field using the lattice Boltzmann method considering wall boundary conditions** Kazuo Yonekura*, Yoshihiro Kanno
9:40	1302	**Kentaro Yaji** (Kyoto University, Japan)	**Level set-based topology optimization using the lattice Boltzmann method considering two-phase fluid flows** Kentaro Yaji*, Takayuki Yamada, Masato Yoshino, Toshiro Matsumoto, Kazuhiro Izui, Shinji Nishiwaki
10:00	1383	**Gil Ho Yoon** (Hanyang University, South Korea)	**Topology optimization for turbulent flow with RANS model** Gil Ho Yoon*
10:20	1340	**Haojie Lian** (Technical University of Denmark, Denmark)	**Combined Topology and Shape Optimization with the DSC method for Stokes Flow Problems** Haojie Lian*, Ole Sigmund

Room: CLT273		Multidisciplinary Optimization 2 (Acoustics)	
Chairs: Deqing Yang (Shanghai Jiao Tong University, China) and **Baoshan Liu** (China University of Petroleum, China)			
Time	**ID**	**Presenting Author**	**Title**
9:20	1411	**Baoshan Liu** (China University of Petroleum, China)	**Acoustic radiation and sensitivity analysis of a random excited structure based on FEM/IBEM combined with PEM** Baoshan Liu*, Liyong Tong
9:40	1204	**Quang Dat Tran** (Sejong University, South Korea)	**Topology Optimization of Underwater Acoustic Lenses** Quang Dat Tran*, Gang-Won Jang, Hyu-Sang Kwon, Wan-Ho Cho, Seung-Hyun Cho, Yo-Han Cho, Hee-Seon Seo
10:00	1279	**Deqing Yang** (Shanghai Jiao Tong University, China)	**Multidisciplinary Design Optimization of Sound Radiation from Underwater Double Cylindrical Shell Structure** Deqing Yang*, Guilian Yi, Jiapeng Cheng
10:20	1147	**Yuki Noguchi** (Kyoto University, Japan)	**Level set-based topology optimization for the design of a wave motion converter in an acoustic-elastic interaction system** Yuki Noguchi*, Takayuki Yamada, Masaki Otomori, Kazuhiro Izui, Shinji Nishiwaki

Room: CLT275		Design of Composite Materials 2	
Chairs: Kai-Uwe Bletzinger (Technische Universität München, Germany) and **Peter D. Dunning** (University of Bath, United Kingdom)			
Time	**ID**	**Presenting Author**	**Title**
9:00	1317	**Yuqing Zhou** (University of Michigan, United States)	**Multi-Objective Topology Optimization of Composite Structures Considering Resin Filling Time** Yuqing Zhou*, Kazuhiro Saitou
9:20	1421	**Onur Deniz** (Technische Universität Braunschweig, Germany)	**Production Based Multicriteria Design Optimization of an Unconventional Composite Fuselage Side Panel by Evolutionary Strategies and Surrogate Models of Manufacturability Analysis** Onur Deniz*, Peter Horst, Carsten Schmidt
9:40	1267	**Yasser M. Meddaikar** (DLR - Institute of Aeroelasticity, Germany)	**Blended Composite Optimization combining Stacking Sequence Tables and a Modified Shepard's Method** Yasser M. Meddaikar*, François-Xavier Irisarri, Mostafa M. Abdalla
10:00	1214	**Long Chen** (University of Shanghai for Science and Technology, China)	**Optimization based on complex B-spline solid** Long Chen*, Jianwei Gao, Yingying Wang
10:20	1084	**Kenichi Ikeya** (Toyota Technological Institute, Japan)	**Multi-objective Free-form Optimization for Shape and Thickness of Shell Structures with Composite Materials** Kenichi Ikeya*, Masatoshi Shimoda

Room: CLR350		Optimization Algorithms 1	
Chairs: Anirban Basudhar (Livermore Software Technology Corporation, United States) and **Jose F. Aguilar Madeira** (University of Lisbon, Portugal)			
Time	**ID**	**Presenting Author**	**Title**
9:20	1053	**Jose F. Aguilar Madeira** (University of Lisbon, Portugal)	**Solving Multiobjective Optimization Problems with Direct MultiSearch** Jose F. Aguilar Madeira*
9:40	1150	**Michael Stingl** (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)	**A New Algorithm for the Optimal Design of Anisotropic Materials** Michael Stingl*
10:00	1094	**Susana Rojas-Labanda** (Technical University of Denmark, Denmark)	**An efficient second-order SQP method for structural topology optimization** Susana Rojas-Labanda*, Mathias Stolpe
10:20	1146	**Anirban Basudhar** (Livermore Software Technology Corporation, United States)	**Multi-objective Optimization Using Adaptive Explicit Non-dominated Region Sampling** Anirban Basudhar*

Room: CLR351		Approximations with Surrogates or Metamodels 2	
Chairs: Masao Arakaw (Kagawa University, Japan) and **Christian Gogu** (Universite Toulouse III, France)			
Time	**ID**	**Presenting Author**	**Title**
9:00	1239	**Masao Arakawa** (Kagawa University, Japan)	**Zooming in Surrogate Optimization Using Convolute RBF** Masao Arakawa*
9:20	1335	**Yiming Zhang** (University of Florida, United States)	**One-dimensional Function Extrapolation Using Surrogates** Yiming Zhang*, Nam H. Kim, Chan-Young Park, Raphael T. Haftka
9:40	1216	**Xiwen Cai** (Huazhong University of Science & Technology, China)	**An efficient sequential sampling approach based on cross-validation for deterministic computer simulations** Xiwen Cai*, Haobo Qiu, Liang Gao
10:00	1379	**Jinglai Wu** (University of Technology, Sydney, Australia)	**A new high-order polynomial surrogate model using sequential sampling method** Jinglai Wu*, Zhen Luo, Nong Zhang
10:20	1005	**Zhaojun Li** (Dalian University of Technology, China)	**A Parallel Optimization Method Based on Kriging Model** Zhaojun Li*, Xicheng Wang

Poster Session

Wednesday 10th June, 2015

11:00 – 12:40

Room: Eastern Avenue Foyer		
ID	**Presenting Author**	**Title**
1001	**Jikai Fan** (Huazhong University of Science and Technology, China)	**Improvement researches on involute tooth profile** Jikai Fan*, Youmin Hu, Yanlei Li, Xiong Jing, Xiaokun Duan
1007	**Hu Wang** (Hunan University, China)	**CAD/CAE integrated reanalysis assisted optimization system for vehicle design** Hu Wang*, Enying Li, Guanxin Huang, Guangyao Li
1042	**Yonghu Wang** (Northwestern Polytechnical University, China)	**Experimental and numerical study of water impact investigations for aircraft crashworthiness analysis** Yonghu Wang*, Shu Dongwei, Y. Fujii, A. Takita, R. Araki, Hu Wei
1043	**Vu Truong Vu** (Ho Chi Minh City University of Transport, Vietnam)	**Weight Minimization of Trusses with Natural Frequency Constraints** Vu Truong Vu*
1050	**Xueguan Song** (Dalian University of Technology, China)	**Reliability based design optimization for high-strength steel tailor welded thin-walled structures under crashworthiness** Xueguan Song*, Guangyong Sun, Qing Li
1075	**Xue-dao Shu** (Ningbo University, China)	**Design and optimization of billet structure about High-speed Rail bearing in cold rolling** Xue-dao Shu*, Ji-dong Ma, Jie He, Bao-shou Sun, Wen-fei Peng
1080	**Lilin Wang** (Tongji University, China)	**Life Cycle Vibration Sensation Rate Evaluation Model for the Optimal Human Comfort Design of Super Tall Buildings** Lilin Wang*, Yimin Zheng, Tianyi Yu, Xin Zhao
1082	**Xi Zhan** (Tongji University, China)	**Parameter Optimization for the Integrated Optimal Design of Super Tall Buildings with Viscous Damping Walls** Xi Zhan*, Xin Zhao, Yimin Zheng
1095	**Hak Yong Lee** (Yonsei University, South Korea)	**Shape Optimization of a Nanoparticle for Plasmonic Enhancement in a Small Gap** Hak Yong Lee*, Jeonghoon Yoo
1122	**Baoshou Sun** (Ningbo University, China)	**Optimization of Process Parameters for Three-roll Skew Rolling Based on Design of Experiment (DOE)** Baoshou Sun*, Guangxing Huang, Wenfei Peng, Xuedao Shu, Lu Wang
1126	**Wensheng Wang** (Henan University of Science and Technology, China)	**Reduced super beam based approach to finite element model updating of beam-type structures** Wensheng Wang*, Haojie Wei, Zhonghua Hou
1133	**Ole Sigmund** (Technical University of Denmark, Denmark)	**Topology Optimization of compliant mechanism design using a constraint on the maximum stress** Daniel Milbrath De Leon, Joe Alexandersen, Jun Sergio Ono Fonseca, Ole Sigmund*
1134	**Ding Chen** (Hunan University, China)	**Simulation Study on the Prediction of Dangerous Conditions for Occupant in a Running Vehicle Equipped with Airbag** Weigang Zhang, Ding Chen*

Room: Eastern Avenue Foyer		
ID	**Presenting Author**	**Title**
1169	**Wen Yao** (National University of Defense Technology, China)	**An active subspace approach to multidisciplinary robust design of small satellites** Xingzhi Hu, Xiaoqian Chen, Geoffrey T. Parks, Wen Yao*, Pranay Seshadri
1172	**Guilian Yi** (Seoul National University, South Korea)	**A TIMP Method for Topology Optimization with Displacement and Stress Constraints in Multiple Loading Cases** Guilian Yi*, Yunkang Sui, Byeng D. Youn
1243	**Bo P. Wang** (University of Texas at Arlington, United States)	**Optimal Design of a Parallel Beam System with Elastic Supports to Minimize Flexural Response to Harmonic Loading** Bret R. Hauser, Bo P. Wang*
1281	**Anna-Lena Beger** (RWTH Aachen University, Germany)	**Application of a Multi-Objective Optimization Approach on Sandwich Structures** Liliane Ngahane Nana, Thomas Fieder, Anna-Lena Beger*, Jörg Feldhusen
1289	**Erik Andreassen** (Technical University of Denmark, Denmark)	**Optimal microstructures** Erik Andreassen*, Ole Sigmund
1345	**Haojie Lian** (Technical University of Denmark, Denmark)	**Combined Topology and Shape Optimization with the DSC method for Stress Constraint Problems** Haojie Lian*, Asger N. Christiansen, Daniel A. Tortorelli, Niels Aage, Ole Sigmund
1301	**Karoly Jarmai** (University of Miskolc, Hungary)	**Solving Multiple Tour Multiple Traveling Salesman Problem With Evolutionary Programming** László Kota, Karoly Jarmai*
1305	**Paolo Guarneri** (Technical University of Cluj-Napoca, Romania)	**An efficient parallel coordination method for decomposition based optimization using two duality theorems** Meng Xu, Georges Fadel, Margaret M. Wiecek, Paolo Guarneri*
1417	**Kiichiro Sawada** (Kagoshima University, Japan)	**Topology optimizations of soft elastic plates for seismic response control of building structures** Kiichiro Sawada*, Tsubasa Yamashita, Takumi Goto
1420	**Dongchen Qin** (Zhengzhou University, China)	**Conceptual Design of Box Beam Based on Three-dimensional Topology Optimization** Dongchen Qin*, Peng Du, Qiang Zhu, Junjie Yang
1438	**Josephine V. Carstensen** (Johns Hopkins University, United States)	**New algorithms for considering manufacturing constraints in topology optimization** Josephine V. Carstensen*, Andrew T. Gaynor, James K. Guest
1455	**Guangyong Sun** (Hunan University, China)	**Reliability-based design optimization of vehicle front-end structure for pedestrian lower extremity protection** Guangyong Sun*, Xiaojiang Lv, Jianguang Fang, Xianguang Gu, Qing Li
1459	**Ali Entezari** (University of Sydney, Australia)	**Optimization of bone tissue scaffolds fabricated by robocasting technique** Ali Entezari*, Zhongpu Zhang, Junning Chen, Qing Li

Session 7

Wednesday 10th June, 2015

14:00 – 16:00

Room: EAA		Topology and Shape Optimization 14	
Chairs: James K. Guest (Johns Hopkins University) and **Zhan Kang** (Dalian University of Technology, China)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1120	**Ole Sigmund** (Technical University of Denmark, Denmark)	**On the optimality of Michell structures** Ole Sigmund*, Niels Aage, Erik Andreassen
14:20	1277	**Alejandro R. Diaz** (Michigan State University, United States)	**A Computational Platform for Optimal Design of Deformable Polyhedral Structures** Alejandro R. Diaz*, Kazuko Fuchi
14:40	1310	**Nam H. Kim** (University of Florida, United States)	**Load-Path Design and Control Using Topology Optimization** Soobum Lee, Nam-Ho Kim*, James Joo
15:00	1454	**Zhan Kang** (Dalian University of Technology, China)	**Topology optimization using mesh-independent point-wise density interpolation** Zhan Kang*, Yiqiang Wang
15:20	1010	**Ashok D. Belegundu** (The Pennsylvania State University, United States)	**A fast fixed point algorithm for topology optimization with multiple loading conditions** Ashok D. Belegundu*
15:40	1011	**Christian Gogu** (Universite Toulouse III, France)	**On the fly construction of reduced order models for topology optimization** Christian Gogu*

Room: CLT375		Topology and Shape Optimization 15 (Thermofluids II)	
Chairs: Emílio Carlos Nelli Silva (Polytechnic School of University of São Paulo, Brazil) and **Xiaoping Qian** (University of Wisconsin-Madison, United States)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1136	**Emílio Carlos Nelli Silva** (Polytechnic School of University of São Paulo, Brazil)	**Design of Laminar Flow Machine Rotor By Using Topology Optimization Method** Luis Fernando Nogueira de Sá, Juan Saenz Romero, Emílio Carlos Nelli Silva*
14:20	1086	**Daisuke Murai** (Toyota Central Research and Development Laboratories Institute, Japan)	**Shape Optimization by using Reaction Diffusion Equations** Daisuke Murai*, Atsushi Kawamoto, Tuguo Kondoh, Tadayoshi Matsumori
14:40	1072	**Xiaoping Qian** (University of Wisconsin-Madison, United States)	**Continuous adjoint based topology optimization of a constrained thermal-fluid system** Xiaoping Qian*, Ercan M. Dede
15:00	1329	**Ricardo Cesare Roman Amigo** (University of Sao Paulo, Brazil Imperial College London, United Kingdom)	**Design of Functionally Graded Adsorption Beds for Gas Storage** Ricardo Cesare Roman Amigo*, R. W. Hewson, E. C. N. Silva
15:20	1422	**Sebastian Nørgaard** (Technical University of Denmark, Denmark)	**Topology optimization of unsteady fluid flow patterns using the lattice Boltzmann method** Sebastian Nørgaard*, Boyan Lazarov, Ole Sigmund
15:40	1034	**Yifei Wang** (Tsinghua University, China)	**A Direct Optimal Control Strategy for Valves in Heat Exchanger Networks and Experimental Validations** Yifei Wang*, Qun Chen

Room: CLT273		Robust and Reliability-Based Design Optimization 2	
Chairs: Tae Hee Lee (Hanyang University, South Korea) and **Robert E. Melchers** (University of Newcastle, Australia)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1444	**Tomohiro Nagano** (Toyota Technological Institute, Japan)	**Robust shape optimization method for shell structure with unknown loadings** Tomohiro Nagano*, Masatoshi Shimoda
14:20	1152	**Zhifang Fu** (Beihang University, China)	**A Novel Anti-optimization Method for Structural Robust Design under Uncertain Loads** Zhifang Fu*, Chunjie Wang, Junpeng Zhao
14:40	1363	**Junyong Jang** (Hanyang University, South Korea)	**Non-parametric approach for uncertainty-based multidisciplinary design optimization considering discrete information** Su-gil Cho, Junyong Jang*, Shinyu Kim, Sanghyun Park, Minuk Lee, Jong-Su Choi, Hyung-Woo Kim, Sup Hong, Tae Hee Lee
15:00	1141	**Robert E. Melchers** (University of Newcastle, Australia)	**Data based materials numerical modelling for FPSO safety and reliability optimization** Robert E. Melchers*, Andrew E. Potts
15:20	1175	**Di Wu** (University of New South Wales, Australia)	**Interval buckling analysis of steel structures using mathematical programming approach** Di Wu*, Wei Gao, Francis Tin-Loi

Room: CLR275		Aerospace Design Optimization 2	
Chairs: Manuel Julio García-Ruiz (Universidad EAFIT, Colombia) and **Manfred Heller** (Defence Science and Technology Organisation, Australia)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1352	**Manuel Julio García-Ruiz** (Universidad EAFIT, Colombia)	**Shape Optimisation of a Gas Injector** Ruber Arley Ruiz-Mesa, Manuel Julio García-Ruiz*
14:20	1385	**Manfred Heller** (Defence Science and Technology Organisation, Australia)	**Overview and lessons from recent applications of rework shape optimisation for aircraft structural life extension: 2005 -2015** Manfred Heller*, Xiaobo Yu, Ron Wescott
14:40	1013	**David J. Munk** (University of Sydney, Australia)	**Aerothermoelastic Structural Topology Optimisation for a Hypersonic Transport Aircraft Wing** David J. Munk*, Gareth A. Vio, Grant Steven
15:00	1052	**Maxim Tyan** (Konkuk University, South Korea)	**A Flying Wing UCAV Design Optimization Using Global Variable Fidelity Modeling** Maxim Tyan*, Nhu Van Nguyen, Jae-Woo Lee
15:20	1160	**Vasily Chedrik** (Central Aerohydrodynamic Institute (TsAGI), Russia)	**Structural design of aircraft wing based on topology and global-local optimization** Vasily Chedrik*, Sergey Tuktarov

Room: CLR350		Topology and Shape Optimization 16 (Nonlinearity)	
Chairs: Shutian Liu (Dalian University of Technology, China) and **Mathias Wallin** (Lund University, Sweden)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1045	**Mathias Wallin** (Lund University, Sweden)	**Topology optimization of geometrically non-linear structures in the deformed state** Mathias Wallin*, Matti Ristinmaa
14:20	1017	**Shintaro Kosaka** (Toyota Technological Institute, Japan)	**Shape Optimization Method of Shell Structures Concerned with Material and Geometrical Nonlinearity** Shintaro Kosaka*, Masatoshi Shimoda
14:40	1191	**Kyeong-Soo Yun** (Korea Advanced Institute of Science & Technology, South Korea)	**Topology optimization of rubber bushing with viscoelastic material** Kyeong-Soo Yun*, Sung-Jae Heo, Sung-Kie Youn
15:00	1168	**Schalk Kok** (University of Pretoria, South Africa)	**Optimizing snap-through structures by using gradient-only algorithms** Schalk Kok*, Daniel N. Wilke
15:20	1458	**Shutian Liu** (Dalian University of Technology, China)	**Microstructural topology optimization of viscoelastic materials for maximum modal loss factor of macrostructures** Shutian Liu*, Wenjiong Chen
15:40	1292	**Josephine V. Carstensen** (Johns Hopkins University, United States)	**Topology Optimization of Cellular Materials for Properties Governed by Nonlinear Mechanics** Josephine V. Carstensen*, James K. Guest

Room: CLR351		Design Optimization in Civil and Structural Engineering 2	
Chairs: Hemant Kumar Singh (University of New South Wales, Australia) and **Wei Gao** (University of New South Wales, Australia)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1046	**Hemant Kumar Singh** (University of New South Wales, Australia)	**Many-objective Optimization in Engineering Design: Case Studies Using a Decomposition Based Evolutionary Algorithm** Hemant Kumar Singh*, Tapabrata Ray
14:20	1171	**Moacir Kripka** (University of Passo Fundo, Brazil)	**Optimization of Reinforced Concrete Frames by Harmony Search Method** Moacir Kripka*, Deise Boito, Juliana Triches, Guilherme Fleith de Medeiros
14:40	1163	**Yoyong Arfiadi** (Atma Jaya Yogyakarta University, Indonesia)	**Cross Sections and Prestressing Forces Optimizations of Prestressed Concrete Beams** Yoyong Arfiadi*, Alfian Wiranata Zebua
15:00	1192	**Seongmin Kim** (Korea Advanced Institute of Science and Technology, South Korea)	**Case Study of Queue Growth Equalization for Urban Traffic Signal Optimization** Seongmin Kim*, Jihye Byun, Kitae Jang, In Gwun Jang
15:20	1081	**Tao Shi** (Tongji University, China)	**Integrated Optimal Life Cycle Design of Super Tall Buildings with Viscous Dampers** Xin Zhao, Tao Shi*

Session 8

Wednesday 10th June, 2015

16:20 – 18:00

Room: EAA		Design Optimization in Civil and Structural Engineering 3	
Chairs: Yi-Min (Mike) Xie (RMIT University, Australia) and **Wolfgang Achtziger** (Friedrich-Alexander University Erlangen-Nürnberg, Germany)			
Time	**ID**	**Presenting Author**	**Title**
16:20	1197	**Yi-Min (Mike) Xie** (RMIT University, Australia)	**Topology Optimization for Conceptual Architectural Design** Yi-Min (Mike) Xie*
16:40	1263	**Wolfgang Achtziger** (Friedrich-Alexander University Erlangen-Nürnberg, Germany)	**Topology Optimization of Discrete/Discretized Structures: On Limiting Displacements in Designs with Singular Stiffness Matrix and Some Implications on Optimality Conditions** Wolfgang Achtziger*
17:00	1129	**Ryota Nonami** (Hiroshima University, Japan)	**Study on Optimization for Large Structures using Hybrid GA** Ryota Nonami*, Mitsuru Kitamura, Akihiro Takezawa
17:20	1188	**Keunhyoung Park** (Yonsei University, South Korea)	**Distributed NSGA-II for seismic retrofitting optimization with multi-core PC cluster** Keunhyoung Park*, Hyo Seon Park
17:40	1346	**Saranthip Rattanaserikiat** (Johns Hopkins University, United States)	**Topology Optimization of Truss and Frame Structures Considering Constructability Costs** Mu Zhu, Saranthip Rattanaserikiat*, James K. Guest

Room: CLT375		Topology and Shape Optimization 17 (Robustness)	
Chairs: Frederic Nicolas Gillot (École centrale de Lyon, France) and **Carl-Johan Thore** (Linköping University, Sweden)			
Time	**ID**	**Presenting Author**	**Title**
16:20	1096	**Carl-Johan Thore** (Linköping University, Sweden)	**Large-scale robust topology optimization under load uncertainty** Carl-Johan Thore*, Erik Holmberg, Anders Klarbring
16:40	1377	**Frederic Nicolas Gillot** (École centrale de Lyon, France)	**Robust shape optimization under vibroacoustic criteria and uncertain parameters** Frédéric Gillot*, Renata Troian, Koji Shimoyama, Sebastien Besset
17:00	1130	**Ning Chen** (Hunan University, China)	**Topology optimization of structures with interval random parameters** Ning Chen*, Dejie Yu, Baizhan Xia, Jian Liu
17:20	1354	**Jiaxin Zhang** (Johns Hopkins University, United States)	**Topology optimization under uncertainty using adaptive Monte Carlo simulation** Jiaxin Zhang*, James K. Guest, Michael D. Shields
17:40	1105	**Yoshiaki Nakazawa** (Osaka Prefecture University, Japan)	**Robust topology optimization of thin plate structure under concentrated load with uncertain load point** Yoshiaki Nakazawa*, Nozomu Kogiso, Takayuki Yamada, Shinji Nishiwaki

Room: CLT273		Robust and Reliability-Based Design Optimization 3	
Chairs: Hae Chang Gea (Rutgers University, United States) and **Peng Hao** (Dalian University of Technology, China)			
Time	**ID**	**Presenting Author**	**Title**
16:20	1414	**Hae Chang Gea** (Rutgers University, United States)	**Topology Optimization with Non-probabilistic Load Uncertainty** Wei Song, Euihark Lee, Hae Chang Gea*
16:40	1378	**Yang Yang** (Johns Hopkins University, United States)	**Topology Optimization of Structures under Random Excitations** Yang Yang*, Mu Zhu, Michael D. Shields, James K. Guest
17:00	1213	**Rodney Owen Persky** (Queensland University of Technology, Australia)	**Robust Design and Optimisation of a Radial Turbine within a Supercritical CO_2 Solar Brayton Cycle** Rodney Owen Persky*, Emilie Sauret, Andrew Beath
17:20	1230	**Wen Yao** (National University of Defense Technology, China)	**A mixed uncertainty analysis algorithm based on limit state surrogate and interval grouping strategy** Wen Yao*, Xiaoqian Chen, Yong Zhao, Jian Zhang
17:40	1124	**Peng Hao** (Dalian University of Technology, China)	**Reliability-Based Optimum Design of Stiffened Panels under Multi-source Uncertainties** Peng Hao*, Bo Wang, Gang Li, Zeng Meng

Room: CLT275		Design Optimization in Multiscale Problems 2	
Chairs: Tomasz Lewiński (Warsaw University of Technology, Poland) and **Zhen Luo** (University of Technology, Sydney, Australia)			
Time	**ID**	**Presenting Author**	**Title**
16:20	1039	**Tomasz Lewiński** (Warsaw University of Technology, Poland)	**Topology optimization of continuum structures made of non-homogeneous materials of isotropic or cubic symmetry** Sławomir Czarnecki, Radosław Czubacki, Tomasz Lewiński*, Paweł Wawruch
16:40	1035	**Mingdong Zhou** (Technical University of Denmark, Denmark)	**Achieving minimum length scale in topology optimization by geometric constraints** Mingdong Zhou*, Boyan S. Lazarov, Fengwen Wang, Ole Sigmund
17:00	1394	**Zhen Luo** (University of Technology, Sydney, Australia)	**Integrated design of cellular materials and structures using the topological shape optimization** Hao Li, Zhen Luo*, Liang Gao
17:20	1176	**Junji Kato** (Tohoku University, Japan)	**Multiscale topology optimization for hyperelastic material** Junji Kato*, Daishun Yachi, Hiroya Hoshiba, Kenjiro Terada, Takashi Kyoya

Room: CLR350		Structural Optimization 1 (Damage)	
Chairs: Raj Das (University of Auckland, New Zealand) and **Kazuyuki Hanahara** (Kobe University, Japan)			
Time	**ID**	**Presenting Author**	**Title**
16:20	1069	**Raj Das** (University of Auckland, New Zealand)	**Fatigue life optimisation of damage tolerant structures using design space exploration** Raj Das*, Rhys Jones
16:40	1396	**Kazuyuki Hanahara** (Kobe University, Japan)	**Structural Damage Identification by Means of Neural Network** Kazuyuki Hanahara*, Yukio Tada
17:00	1250	**Lise Noël** (University of Liège, Belgium)	**Damage process sensitivity analysis using an XFEM-Level Set framework** Lise Noël*, Pierre Duysinx, Kurt Maute
17:20	1402	**Wenjun Li** (Tongji University, China)	**Stability-ensured topology optimization of boom structures with stress constraints** Wenjun Li*, Qicai Zhou, Zhen Jiang, Wei Chen

Room: CLR351		Mechanical Engineering 4 (Metal Forming)	
Chairs: Satoshi Kitayama (Kanazawa University, Japan) and **Schalk Kok** (University of Pretoria, South Africa)			
Time	**ID**	**Presenting Author**	**Title**
16:20	1375	**Satoshi Kitayama** (Kanazawa University, Japan)	**Simultaneous optimization of initial blank shape and blank holder force trajectory for square cup deep drawing using sequential approximate optimization** Satoshi Kitayama*, Marina Saikyo, Kiichiro Kawamoto, Ken Yamamichi
16:40	1102	**Robert Dienemann** (University of Wuppertal, Germany)	**Topology optimization considering the requirements of deep-drawn sheet metals** Robert Dienemann*, Axel Schumacher, Sierk Fiebig
17:00	1180	**Bin Wang** (Griffith University, Australia)	**Likelihood of buckling mode interaction in shape optimisation of manufacturable cold-formed steel columns** Bin Wang*, Benoit P. Gilbert, Hong Guan, Lip H. Teh

Session 9

Thursday 11th June, 2015

09:00 – 10:40

Room: EAA		Topology and Shape Optimization 18 (Dynamics I)	
Chairs: José C. Bellido (Universidad de Castilla-La Mancha, Spain) and **Bin Niu** (Dalian University of Technology, China)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1091	**José C. Bellido** (Universidad de Castilla-La Mancha, Spain)	**Peridynamics and topology optimization** José C. Bellido*
09:20	1112	**Kun Yan** (Dalian University of Technology, China)	**Topology optimization of plate structures subject to initial excitations for minimum dynamic performance index** Kun Yan*, Gengdong Cheng
09:40	1182	**Alexander Held** (Hamburg University of Technology, Germany)	**Topology Optimization of Members of Dynamically Loaded Flexible Multibody Systems using Integral Type Objective Functions and Exact Gradients** Alexander Held*, Sven Knüfer, Robert Seifried
10:00	1222	**Jong Wook Lee** (Hanyang University, South Korea)	**Structural optimization of dynamic system considering the fatigue life in frequency domain** Jong Wook Lee*, Gil Ho Yoon, Seung Hyun Jeong, Jun Hwan Kim
10:20	1225	**Bin Niu** (Dalian University of Technology, China)	**On objective functions of minimizing the vibration response of continuum structures subjected to external excitation** Bin Niu*, Xiaomeng He, Rui Yang

Room: CLT375		Topology and Shape Optimization 19 (Truss)	
Chairs: Yoshihiro Kanno (University of Tokyo, Japan) and **Tomasz Sokół** (Warsaw University of Technology, Poland)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1181	**Tomasz Sokół** (Warsaw University of Technology, Poland)	**On the numerical optimization of multi-load spatial Michell trusses using a new adaptive ground structure approach** Tomasz Sokół*, George I. N. Rozvany
09:20	1306	**Nicoló Pollini** (Technion – Israel Institute of Technology, Israel)	**Minimum-cost topology and sizing optimization of viscous dampers for seismic retrofitting of 3-D frame structures** Nicoló Pollini*, Oren Lavan, Oded Amir
09:40	1044	**Yoshihiro Kanno** (Tokyo Institute of Technology, Japan)	**Truss Topology Optimization under Constraints on Number of Different Design Variables** Yoshihiro Kanno*
10:00	1296	**Linwei He** (University of Sheffield, United Kingdom)	**Use of geometry optimization to rationalize layout optimized trusses** Linwei He*, Matthew Gilbert
10:20	1425	**Yohei Yokosuka** (Kagoshima University, Japan)	**Structural Optimization for Stabilized and Stiffened Structural System by Tension Members** Yohie Yokosuka*, Toshio Honma

Room: CLT173		Structural Optimization 2 (Commercial and Industry)	
Chairs: Gang-Won Jang (Sejong University, South Korea) and **Miguel A. A. S. Matos** (Dassault Systèmes Deutschland GmbH, Germany)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1295	**Gang-Won Jang** (Sejong University, South Korea)	**Topology optimization of industrial robots considering system-level performance** Gang-Won Jang*, Byung Jun Kim, Jae Young Lee, Jin Gyun Park
09:20	1037	**Wook-han Choi** (Hanyang University, South Korea)	**Comparison of some commercial software systems for structural optimization** Wook-han Choi*, Cheng-guo Huang, Jong-moon Kim, Gyung-Jin Park
09:40	1322	**Sierk Fiebig** (Volkswagen AG, Braunschweig, Germany)	**Future challenges for topology optimization for the usage in automotive lightweight design technologies** Sierk Fiebig*, Jürgen Sellschopp, Holger Manz, Thomas Vietor, Joachim K. Axmann, Axel Schumacher
10:00	1427	**Miguel A. A. S. Matos** (Dassault Systèmes Deutschland GmbH, Germany)	**Sizing Optimization for Industrial Applications** Miguel A. A. S. Matos*, Peter M. Clausen, Claus B.W. Pedersen

Room: CLT175		Automotive Engineering 3	
Chairs: Dooho Lee (Dongeui University, South Korea) and **Cheol Kim** (Kyungpook National University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1074	**Takanobu Saito** (JFE Steel Corporation, Japan)	**A study of optimization for automotive parts and structures by using inertia relief** Takanobu Saito*, Jiro Hiramoto, Toshiaki Urabe
09:20	1196	**Wei Zhong** (Tsinghua University, China)	**Topology and sizing optimisation of integral bus chassis with the use of a cooperative coevolutionary genetic algorithm with independent ground structures** Wei Zhong*, Ruiyi Su, Liangjin Gui, Zijie Fan
09:40	1440	**Dooho Lee** (Dongeui University, South Korea)	**Parameterization Scheme in a Large Automotive NVH Model for Statistical Validation** Dooho Lee*, Jong-Hyun Kwon, Hyun-Seok Kim
10:00	1149	**Dongchen Qin** (Zhengzhou University, China)	**Simulation and Optimization of MPV Suspension System Based on ADAMS** Dongchen Qin*, Junjie Yang, Qiang Zhu, Peng Du
10:20	1258	**Cheol Kim** (Kyungpook National University, South Korea)	**Topology Optimum Design of a Commercial Vehicle Coupling Structure Considering Sliding Frictional and Driving Loads** Seungyoon Lee, Cheol Kim*, Namjin Jeon

Room: CLR350		Large Scale and High Performance Computing	
Chairs: Erik Andreassen (Technical University of Denmark, Denmark) and **Alemseged Gebrehiwot Weldeyesus** (Technical University of Denmark, Denmark)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1090	**Alemseged Gebrehiwot Weldeyesus** (Technical University of Denmark, Denmark)	**On Solving Large-Scale Free Material Optimization Problems** Alemseged Gebrehiwot Weldeyesus*, Mathias Stope
09:20	1268	**Fenfen Xiong** (Beijing Institute of Technology, China)	**Parallel Particle Swarm Optimization on Graphical Processing Unit with Application to Trajectory Optimization** Qi Wu, Fenfen Xiong*
09:40	1299	**Erik Andreassen** (Technical University of Denmark, Denmark)	**Extremely large-scale topology optimization** Erik Andreassen*, Niels Aage, Boyan S. Lazarov, Ole Sigmund
10:00	1210	**Seongbin Kang** (Korea Advanced Institute of Science and Technology, South Korea)	**Accuracy Improvement of MPP-Based Dimension Reduction Method Using the Eigenvectors of the Hessian Matrix** Seongbin Kang*, Ikjin Lee, Jongmin Lim

Room: CLR351		Aerospace Design Optimization 3	
Chairs: Vladimir Balabanov (Boeing, Australia) and **Moritz Frenzel** (BMW Group, Germany)			
Time	**ID**	**Presenting Author**	**Title**
09:00	1436	**Moritz Frenzel** (BMW Group, Germany)	**Multidisciplinary optimization and integration requirements for large-scale automotive and aerospace design work** BMW: Moritz Frenzel*, Daniel Heiserer, David Keller, Markus Schemat Boeing: Vladimir Balabanov, Rodney Dreisbach, Steve Georgiadis
09:20	1087	**Christopher Chahine** (von Karman Institute for Fluid Dynamics, Belgium)	**Multidisciplinary Design Optimization of an Aero-Engine Fan Blade with Consideration of Bypass and Core Performance** Christopher Chahine*, Tom Verstraete, Li He
09:40	1106	**Andrew Borean Lambe** (University of Toronto, Canada)	**Structural and Aerostructural Design of Aircraft Wings with a Matrix-Free Optimizer** Andrew B. Lambe*, Joaquim R. R. A. Martins
10:00	1435	**Vladimir Balabanov** (Boeing, Australia)	**Common Automotive and Aerospace Requirements for Commercial Structural Optimization Software** Boeing: Vladimir Balabanov*, Rodney Dreisbach, Steve Georgiadis BMW: Moritz Frenzel, Daniel Heiserer, David Keller, Markus Schemat
10:20	1119	**Zhiwei Feng** (National University of Defense Technology, China)	**Efficient Aerodynamic Optimization Using a Multiobjective Optimization Based Framework to Balance the Exploration and Exploitation** Zhiwei Feng*, Tao Yang, Jianquan Ge, Qiangang Tang, Yang Ma

Session 10

Thursday 11th June, 2015

11:00 – 12:40

Room: EAA		Topology and Shape Optimization 20 (Dynamics II)	
Chairs: Yoojeong Noh (Keimyung University, South Korea) and **Dong Wang** (Northwestern Polytechnical University, China)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1068	**Simo Schmidt** (RWTH Aachen University, Germany)	**On the integration of tuned multi-mass dampers into a topology optimization method for machine tool structural dynamics** Christian Brecher, Simo Schmidt*, Marcel Fey
11:20	1237	**Yoojeong Noh** (Keimyung University, South Korea)	**Comparison Study of Statistical Modelling Methods for Identifying Distribution Types** Youngjin Kang, Yoojeong Noh*, O-Kaung Lim
11:40	1428	**Junpeng Zhao** (Beihang University, China)	**A new method for maximum dynamic response topology optimization in the time domain** Junpeng Zhao*, Chunjie Wang
12:00	1121	**Yijie Hu** (Beihang University, China)	**Mode Identification Applied in Size Optimization with Frequency Constraints** Shenyan Chen, Yijie Hu*

Room: CLT375		Topology and Shape Optimization 21 (Thermofluids III)	
Chairs: Anton Evgrafov (Norwegian University of Science and Technology, Norway) and **Fabian Wein** (University Erlangen-Nuernberg, Germany)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1430	**Anton Evgrafov** (Norwegian University of Science and Technology, Norway)	**State space topology optimization method for non-selfadjoint problems in fluid mechanics** Anton Evgrafov*
11:20	1255	**Fabian Wein** (University Erlangen-Nuernberg, Germany)	**Optimal material distribution for an unsaturated flow problem** Marc Avila, Michael Stingl, Fabian Wein*
11:40	1286	**Tianjian Li** (University of Shanghai for Science and Technology, China)	**Multidisciplinary Design and Analysis of the Direct Drive Aerostatic Slideway** Tianjian Li*, Xiaohong Ding, Kai Cheng
12:00	1107	**Danny John Lohan** (University of Illinois at Urbana-Champaign, United States)	**Topology Optimization for Heat Conduction Using Generative Design Algorithms** Danny J. Lohan*, Ercan M. Dede, James T. Allison
12:20	1264	**Joe Alexandersen** (Technical University of Denmark, Denmark)	**Topology optimisation of passive coolers for light-emitting diode lamps** Joe Alexandersen*, Ole Sigmund, Niels Aage

Room: CLT173		Topology and Shape Optimization 22 (Isogeometry II)	
Chairs: Bo P. Wang (University of Texas at Arlington, United States) and **Youn Doh Ha** (Kunsan National University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1117	**Youn Doh Ha** (Kunsan National University, South Korea)	**Isogeometric shape optimization of general curved geometry: generalized shape sensitivity analysis in curvilinear coordinates and shell applications** Youn Doh Ha*
11:20	1275	**Timothée Leblond** (IRT SYSTEMX, Palaiseau, France)	**Gradient-based optimization of parameterized CAD geometries** Timothée Leblond*, Pierre Froment, Paul de Nazelle, Reda Sellakh, Philippe Serré, Gaël Chevallier
11:40	1104	**Kristian E. Jensen** (Imperial College London, United Kingdom)	**Optimising Topology Optimisation with Anisotropic Mesh Adaptation** Kristian E. Jensen*
12:00	1162	**Guilian Yi** (Seoul National University, South Korea)	**Geometric Feature Identification from Topology Optimization Results** Guilian Yi*, Byeng D. Youn, Nam H. Kim
12:20	1393	**Bo P. Wang** (University of Texas at Arlington, United States)	**Adjoint Methods of Sensitivity Analysis for Lyapunov Equation** Boping Wang*, Kun Yan

Room: CLT175		Topology and Shape Optimization 23 (Electromagnetics)	
Chairs: In Gwun Jang (Korea Advanced Institute of Science and Technology, South Korea) and **Scott Townsend** (University of Sydney, Australia)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1251	**Toshiki Okamoto** (Kyoto University, Japan)	**Layout optimization of electromagnetic actuators for deformable mirror devices** Toshiki Okamoto*, Takayuki Yamada, Kazuhiro Izui, Shinji Nishiwaki
11:20	1098	**Erin Kuci** (University of Liège, Belgium)	**Direct and Adjoint Sensitivity Analysis of Nonlinear Magnetostatic System: Application to Shape Optimization of Electrical Machines** Erin Kuci*, Christophe Geuzaine, Patrick Dular, Pierre Duysinx
11:40	1307	**Suzanne Roberts** (University of Pretoria, South Africa)	**Electromagnetic levitation coil design using gradient-based optimization** Suzanne Roberts*, Schalk Kok, Johan Zietsman, Helen Inglis
12:00	1097	**In Gwun Jang** (Korea Advanced Institute of Science and Technology, South Korea)	**Layout optimization of the secondary coils for wireless power transfer systems** Seung Beop Lee, In Gwun Jang*
12:20	1077	**Ming Li** (Dalian University of Technology, China)	**Design optimization in stretchable electronics: from straight to curvilinear, from curvilinear to complex** Ming Li*, Zhan Kang, Tengfei Zhao

Room: CLR350		Multidisciplinary Optimization 3 (Biomedical II)	
Chairs: Yuhang Chen (Heriot-Watt University, United Kingdom) and **Junning Chen** (University of Sydney, Australia)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1138	**Che-Cheng Chang** (University of Sydney, Australia)	**Design and topology optimisation of fractal vasculature** Che-Cheng Chang*, Shiwei Zhou, Qing Li
11:20	1028	**Junning Chen** (University of Sydney, Australia)	**3D Contact Shape Optimization and Additive Fabrication for Removable Partial Dentures** Junning Chen*, Rohana Ahmad, Hanako Suenaga, Wei Li, Michael Swain, Qing Li
11:40	1016	**Zhongpu Zhang** (University of Sydney, Australia)	**XFEM Based Topology Optimization of All-Ceramic Structures for Enhancing Fracture Resistance** Zhongpu Zhang*, Shiwei Zhou, Eric Li, Wei Li, Michael Swain, Qing Li
12:00	1452	**Hong Wang** (Dalian Neusoft University of Information, China)	**A Multi-objective Docking Method in Drug Molecular Design** Ling Kang*, Hong Wang, Junfeng Gu, Quan Guo

Room: CLR351		Inverse Problems and Parametric Identification	
Chairs: Piotr Breitkopf (Sorbonne universités, Université de technologie de Compiègne, France) and **Akira Saito** (Toyota Central R&D Labs., Inc., Japan)			
Time	**ID**	**Presenting Author**	**Title**
11:00	1208	**Akira Saito** (Toyota Central R&D Labs., Inc., Japan)	**Elastic Moduli Identification Method for Orthotropic Structures based on Vibration Data** Akira Saito*, Yasunari Nishikawa, Shintaro Yamasaki, Kikuo Fujita, Atsushi Kawamoto, Masakatsu Kuroishi, Hideo Nakai
11:20	1398	**Piotr Breitkopf** (Sorbonne universités, Université de technologie de Compiègne, France)	**Shape manifold learning for optimization and inverse analysis** Piotr Breitkopf*
11:40	1143	**Takafumi Nishizu** (Hiroshima University, Japan)	**Damage Detection Method in Non-Destructive Testing Based on Topology Optimization and Eigenvalue Analysis** Takafumi Nishizu*, Akihiro Takezawa, Mitsuru Kitamura

Session 11

Thursday 11th June, 2015

14:00 – 16:00

Room: EAA		Topology and Shape Optimization 24 (Isogeometry I)	
Chairs: Liyong Tong (University of Sydney, Australia) and **Seonho Cho** (Seoul National University, South Korea)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1406	**Liyong Tong** (University of Sydney, Australia)	**Elimination of void element influence on optimization for nonlinear compliance with a buckling constraint using moving iso-surface threshold method** Liyong Tong*, Quantian Luo
14:20	1304	**Tsuyoshi Nomura** (Toyota Central R&D Labs., Inc., Japan)	**Simultaneous Optimization of Topology and Orientation of Anisotropic Material using Isoparametric Projection Method** Tsuyoshi Nomura*, Ercan M. Dede, Tadayoshi Matsumori, Atsushi Kawamoto
14:40	1367	**Minho Yoon** (Seoul National University, South Korea)	**Isogeometric shape design optimization of elastic structures using boundary integral equation** Minho Yoon*, Seonho Cho
15:00	1253	**Sarah Julisson** (Université de Versailles Saint-Quentin-en-Yvelines, France)	**A Novative Optimal Shape Design Based on an Iso-geometric Approach : Application to Optimisation of Surface Shapes With Discontinuous Curvature** Sarah Julisson*, Christian Fourcade, Paul de Nazelle, Laurent Dumas
15:20	1369	**Seung-Wook Lee** (Seoul National University, South Korea)	**Isogeometric Topology Optimization using dual evolution of boundary element method and Level-set method** Seung-Wook Lee*, Minho Yoon, Seonho Cho
15:40	1366	**Myung-Jin Choi** (Seoul National University, South Korea)	**A Mesh Regularization Scheme for Updating Internal Control Points in Isogeometric Shape Optimization** Myung-Jin Choi*, Seonho Cho

Room: CLT375		Structural Optimization 3 (Plates/Shells)	
Chairs: Karoly Jarmai (University of Miskolc, Hungary) and **Jaan Lellep** (University of Tartu, Estonia)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1006	**Karoly Jarmai** (University of Miskolc, Hungary)	**Welded cellular cylindrical shell – a new structural solution for the optimum design of a cantilever column** Jozsef Farkas, Karoly Jarmai*
14:20	1416	**Mahmoud Alfouneh** (University of Sydney, Australia)	**MIST Topology Optimization for Bending Plates-Statically** Mahmoud Alfouneh*, Liyong Tong
14:40	1009	**Sen Lin** (RMIT University, Australia)	**Buckling of reversible-spherical shells: the retraction affected by the shape of aperture** Sen Lin*, Shiwei Zhou, Mike Xie
15:00	1400	**Jaan Lellep** (University of Tartu, Estonia)	**Optimization of elastic plastic plates of piecewise constant thickness** Jaan Lellep*, Julia Polikarpus, Boriss Vlassov
15:20	1100	**Janos Logo** (Budapest University of Technology and Economics, Hungary)	**On the optimal design of curved folded plates with multiple loading** Janos Logo*, Bence Balogh
15:40	1348	**Hongling Ye** (Beijing University of Technology, China)	**Plate/Shell Topological Optimization Subjected to Linear Buckling Constraints by Adopting Composite Exponential Filtering Function** Hongling Ye*, Ning Chen, Peize Shao, Yunkang Sui

Room: CLT173		Optimization Algorithms 2	
Chairs: Hideyuki Azegami (Nagoya University, Japan) and **Kazem Ghabraie** (University of Southern Queensland, Australia)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1154	**Kazem Ghabraie** (University of Southern Queensland, Australia)	**An improvement technique for Bi-directional Evolutionary Structural optimisation (BESO) method** Kazem Ghabraie*
14:20	1186	**Hideyuki Azegami** (Nagoya University, Japan)	**Shape derivative formula of domain integral type** Hideyuki Azegami*, Kenzen Takeuchi, Yusuke Naritomi
14:40	1260	**Katarzyna Tajs-Zielinska** (Cracow University of Technology, Poland)	**Optimization of structural topology using unstructured Cellular Automata** Bogdan Bochenek, Katarzyna Tajs-Zielinska*
15:00	1185	**Daniel Nicolas Wilke** (University of Pretoria, South Africa)	**Design optimization of multi-point constraints in structural analysis** Daniel N. Wilke*, Schalk Kok
15:20	1388	**Dong-Hoon Choi** (Hanyang University, South Korea)	**An efficient constraint handling method using a polynomial regression model** Gyu-Byung Park, Se Jung Lee, Dong-Hoon Choi*

Room: CLT175		Automotive Engineering 4	
Chairs: Shujuan Hou (Hunan University, China) and **Sierk Fiebig** (Volkswagen AG, Braunschweig, Germany)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1059	**Xin Tang** (University of Wollongong, Australia)	**Speed dependent optimisation for variable stiffness vehicle suspension** Xin Tang*, Weihua Li, Haiping Du
14:20	1178	**Donghong Ning** (University of Wollongong, Australia)	**Parameter optimisation design for a six-DOF heavy duty vehicle seat suspension** Donghong Ning*, Haiping Du, Weihua Li
14:40	1357	**Youngsuk Jung** (Hanyang University, South Korea)	**Structural Optimization for Improving Local Dynamic Stiffness of Automotive Body Structure** Youngsuk Jung*, Seungjae Min, Jungho Kim, Kyungwon Lee, Changkun Lee, Yongsuk Kim
15:00	1234	**Guanxin Huang** (Hunan University, China)	**Reanalysis based Geometrical Optimization and Applications in Structure Designs** Guanxin Huang*, Congyi Zhang, Hu Wang, Guoping Wang, Guangyao Li
15:20	1365	**Sunghoon Lim** (Hanyang University, South Korea)	**Integrated Performance Optimization for Wheeled Combat Vehicle by Using Model-Based Design Approach** Sunghoon Lim*, Woochul Lim, Dong-Min Kim, Seungjae Min, Tae Hee Lee, Jung-Pyo Hong
15:40	1062	**Dequan Zhang** (Hunan University, China)	**Time-dependent system reliability analysis method based on the outcrossing rate** Dequan Zhang*, Xu Han, Jiang Chao, Qing Li

Room: CLR350		Multidisciplinary Optimization 4 (Wind Energy)	
Chairs: Achille Messac (Mississippi State University, United States) and **Michael Muskulus** (Norwegian University of Science and Technology, Norway)			
Time	**ID**	**Presenting Author**	**Title**
14:00	1330	**Achille Messac** (Mississippi State University, United States)	**Surrogate-based Particle Swarm Optimization for Large-scale Wind Farm Layout Design** Ali Mehmani, Weiyang Tong, Souma Chowdhury, Achille Messac*
14:20	1389	**Longyan Wang** (Queensland University of Technology, Australia)	**Optimal design of wind farm layout and control strategy** Longyan Wang*, Md Rifat Shahriar, Andy Tan, Yuantong Gu
14:40	1326	**Michael Muskulus** (Norwegian University of Science and Technology, Norway)	**Topology optimization of a jacket structure for an offshore wind turbine with a genetic algorithm** Johan Henrik Martens, Daniel Zwick, Michael Muskulus*
15:00	1347	**Souma Chowdhury** (Mississippi State University, United States)	**A Visually-Informed Decision-Making Platform for Wind Farm Layout Optimization** Souma Chowdhury*, Weiyang Tong, Ali Mehmani, Achille Messac
15:20	1287	**Michael Kirschneck** (Delft University of Technology, Netherlands)	**Structural Dynamic Topology Optimization of a Direct-Drive Single Bearing Wind Turbine Generator** Michael Kirschneck*, H. Polinder, R. A. J. van Ostayen, F. C. M. van Kempen, D. J. Rixen
15:40	1390	**Robert Thomas Rudolf** (Flensburg University of Applied Sciences, Germany)	**Reduced Order Simulation Surrogate for Wind Turbine Component Design** Robert Thomas Rudolf*

State-of-the-Art Discussion

Thursday 11th June, 2015

16:20 – 18:00

Eastern Avenue Auditorium

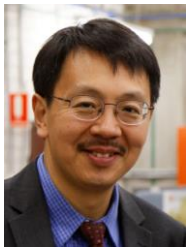
Please join us for the State-of-the-Art (SOTA) Discussion, to be held at Eastern Avenue Auditorium. Four panelists will present and discuss the emerging trends in various technology areas relevant to the WCSMO-11.

Chair

Professor Kyung K. Choi

University of Iowa, United States

Panelists



Professor Qing Li

University of Sydney, Australia

Topic: Topology optimization: achievements and new frontiers

Professor Nozomu Kogiso

Osaka Prefecture University, Japan

Topic: Design under uncertainty: from variability to model-form uncertainty and design validation

Professor Ramana V. Grandhi

Wright State University, United States

Topic: Surrogates and meta-models: for high-dimensionality, multi-fidelity and adaptivity

Professor Erik Lund

Aalborg University, Denmark

Topic: Design applications: success stories and emerging opportunities

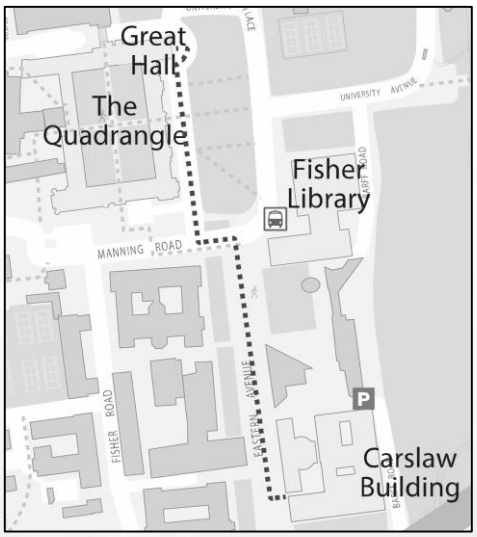
Congress Dinner

Thursday 11th June, 2015

18:30 – 21:30

The Great Hall

Please join us for the Congress Dinner, to be held at the Great Hall



Scientific and Social Excursion

Friday 12th June, 2015

The Sydney Opera House

Following the tradition of the WCSMO, we have organized a scientific and a social visit on the last day of the congress to the Sydney Opera House. The iconic landmark is hailed as

"one of the indisputable masterpieces of human creativity, not only in the 20th century but in the history of humankind"

– 2007 World Heritage

Day Visit (8:45 – 11:00)

Sydney Opera House Tour

From architectural design to structural engineering

Tours are for 1 hour.
Starting time for your tour is shown on your ticket.

Evening Visit (20:00 – 22:30)

Sydney Symphony Orchestra performance

Summer Nights

Haydn – Symphony No.31 (Horn Signal)

Berlioz – Les Nuits d'été (Summer Nights)

Schubert – Symphony No.4 (Tragic)

Conductor: David Robertson

Mezzo-soprano: Katarina Karnéus

Notes