

**Forth International Conference
on Multidisciplinary Design Optimization and Applications**

CONFERENCE PROGRAM
会议程序手册



**5-9 November 2012
Northwestern Polytechnical University, Xi'an, CHINA**

Organized by

Northwestern Polytechnical University (NWPU)

Association for Simulation and Multidisciplinary Design Optimization (ASMDO)

Sponsored by

The Chinese Society of Theoretical and Applied
Mechanics (CSTAM)

National Natural Science Foundation of China
(NSFC)

State Administration of Foreign Experts Affairs

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Conference Schedule in Summary (会议日程简介)

| 5 November 2012 | |
|------------------------|-----------------------------------------------------------------------------------------------|
| All Day | Registration at Zhenghe Hotel(ZHH) reception desk, NPU 正禾宾馆前台注册 |
| 18:00-20:00 | Reception Banquet (Tang West Market) 欢迎宴(大唐西市) |
| 6 November 2012 | |
| 8:00-8:30 | Opening Ceremony (Conference Room at ZHH) 开幕式 (正禾宾馆会议室) |
| 8:30-8:50 | Photo(Gate of ZHH) 照相(正禾宾馆楼下) |
| 8:50-10:10 | Keynote Presentations 主题报告 |
| 10:10-10:30 | Tea Break 茶歇 |
| 10:30-11:50 | Technical Presentations 学术报告 |
| 11:50-12:50 | Buffet (ZHH) 自助餐 (正禾宾馆) |
| Lunch break 午休 | |
| 14:00-15:40 | Technical Presentations 学术报告 |
| 15:40-16:00 | Tea Break 茶歇 |
| 16:00-18:00 | Technical Presentations 学术报告 |
| 18:00-20:00 | Banquet 晚宴 |
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| 7 November 2012 | |
| 8:00-9:20 | Keynote Presentations 主题报告 |
| 9:20-9:50 | Tea Break 茶歇 |
| 9:50-11:50 | UTC-NPU Special Session |
| 11:50-12:35 | Buffet (ZHH) 自助餐(正禾宾馆) |
| Lunch break 午休 | |
| 14:00-15:40 | Technical Presentations 学术报告 |
| 15:40-16:00 | Tea Break 茶歇 |
| 16:00-17:20 | Technical Presentations 学术报告 |
| 18:00-20:00 | Dinner(ZHH) 晚餐 (正禾宾馆) |
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| 8 November 2012 | |
| 8:00-17:00 | Tour(Terracotta Army, Huaqing Pool) 旅游观光 (兵马俑、华清池) |
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| 9 November 2012 | |
| 8:00-17:00 | Visiting ESAC Lab, History Museum of NPU and Xidian University 参观 ESAC 实验室、西工大校史馆和西安电子科技大学 |

Conference Schedule 会议日程

5 November 2012

All Day Registration at ZHH reception desk 正禾宾馆前台注册

18:00-20:00 Reception Banquet (Tang West Market) 欢迎宴(大唐西市)

6 November 2012

Opening Ceremony 开幕式

Keynote and technical Presentations

- Keynote presentations include 35 minutes for speech and 5 minutes for questions and answers.
- Technical presentations include 15 minutes for speech and 5 minutes for questions and answers.

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| Opening Ceremony 开幕式 8:00-8:30 | Chairman: Prof. ZHANG Weihong 张卫红 <ul style="list-style-type: none"> ● Welcome Speech by Vice-President of NPU WEI Bingbo Academician, Northwestern Polytechnical University, China ● Speech by Co-Chairman Beckers Pierre Universit é de Li è ge (ULG), Belgium |
| Photo 照相 8:30-8:50 | Gate of ZHH 正禾宾馆楼下 |
| Keynote Presentations 主题报告 8:50-10:10 | Chairman: Prof. ZHANG Weihong 张卫红 <ol style="list-style-type: none"> 1. Prof. Kemper Lewis New York State Center for Engineering Design and Industrial Innovation Making sense of complexity in multidisciplinary design (8:50-9:30) 2. Prof. Duan Baoyan 段宝岩 Academician, Xidian University, China New development of microwave antenna and the synthetic optimization with structural and electromagnetic integration (9:30-10:10) |
| 10:10-10:30 | Tea Break 茶歇 |
| Technical Presentations 学术报告 10:30-11:50 | Chairman: Profs. BREITKOPF Piotr and ZHU Jihong 朱继宏 <ol style="list-style-type: none"> 1. Prof. MOUMNI Ziad École Nationale Supérieure de Techniques avancées, France Global approach for the design of shape memory alloy structures against fatigue. (10:30-10:50) 2. Prof. GUO Xu 郭旭 Dalian University of Technology, China |

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| | <p>Stress-related optimal topology design of continuum structures. (10:50-11:10)</p> <p>3. <i>Prof. BECKERS Pierre</i> <i>Université de Liège (ULG), Belgium</i> Switching from spacecrafts to cities analysis and optimization. (11:10-11:30)</p> <p>4. <i>Prof. CHUA Hui Tong</i> <i>University of Western Australia, and Taiyuan University of Technology, China</i> Low grade waste heat driven desalination technology. (11:30-11:50)</p> |
| 11:50-12:50 | Buffet (Zhenghe Hotel) 自助餐 (正禾宾馆) |
| Lunch break 午休 | |
| <p>Keynote</p> <p>Presentations</p> <p>主题报告</p> <p>14:00-14:40</p> | <p>Chairman: Profs. ZARKA Joseph and GUO Xu 郭旭</p> <p>1. <i>Prof. DANG Van Ky</i> <i>École Polytechnique, France</i> New methods in fatigue design of structures. (14:00-14:40)</p> |
| <p>Technical Presentations</p> <p>学术报告</p> <p>14:40-15:40</p> | <p>2. <i>Prof. GAO Lizhen</i> <i>Taiyuan University of Technology, China</i> The decomposition of nitric oxide over carbon nanotube supported metals catalysts. (14:40-15:00)</p> <p>3. <i>Prof. BASSIR David Hicham</i> <i>Université de Lorraine, Université de Technologie de Belfort-Montbéliard (UTBM), France</i> Optimization of the Material Properties using Hybrid Approach : Application for of virtual porous solids. (15:00-15:20)</p> <p>4. <i>Asso. Prof. XIE Gongnan 谢公南</i> <i>Northwestern Polytechnical University, China</i> Integrated optimization design and thermomechanical analysis of lightweight thermal protection structures. (15:20-15:40)</p> |
| 15:40-16:00 | Tea Break 茶歇 |
| <p>Technical Presentations</p> <p>学术报告</p> <p>16:00-18:00</p> | <p>Chairman: Profs. KEMPER Lewis and MA Haitao 马海涛</p> <p>1. <i>Prof. CHUA Hui Tong</i> <i>The University of Western Australia, Australia and Taiyuan University of Technology, China</i> Geothermal air conditioning: typical applications using deep-warm and shallow-cool reservoirs for cooling in Perth, Western Australia. (16:00-16:20)</p> |

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| | <p>2. <i>Prof. OMAR El-kedim</i> <i>Université de Technologie de Belfort-Montb éiard (UTBM), France</i> First principles investigation of the substitutional doping of Mn and Ti in Mg₂Ni phase. (16:20-16:40)</p> <p>3. <i>Prof. ZARKA Joseph</i> <i>CADLM, France</i> Reduced complexity based robust optimization with application for automotive crashworthiness. (16:40-17:00)</p> <p>4. <i>Prof. LIU Zhenyu 刘震宇</i> <i>Changchun Institute of Optics, Fine Mechanics and Physics, China</i> Topology optimization for non-moving-part microfluidic devices. (17:00-17:20)</p> <p>5. <i>Asso. Prof. CAO Hongjun 曹鸿钧</i> <i>Xidian University, China</i> Pretension and size optimization of deployable frame-cable antennas. (17:20-17:40)</p> <p>6. <i>Dr. GUO Weichao 郭伟超</i> <i>Bridges and Structures Department, IFSTTAR, Paris, France</i> An original method for structural health monitoring using vibration-based framework. (17:40-18:00)</p> |
| 18:00-20:00 | Banquet 晚宴 |

7 November 2012

Keynote and technical Presentations

Keynote presentations include 35 minutes for speech and 5 minutes for questions and answers. Technical presentations include 15 minutes for speech and 5 minutes for questions and answers

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| <p>Keynote Presentations 主题报告 8:00-9:20</p> | <p>Chairman: <i>Prof. DUAN Baoyan 段宝岩 (Academician, Xidian University, China)</i></p> <p>1. <i>Prof. KANG Zhan 亢战</i> <i>Dalian University of Technology, China</i> Topology optimization using finite element mesh-independent density interpolation (8:00-8:40)</p> <p>2. <i>Prof. ZHU Jihong 朱继宏</i> <i>Northwestern Polytechnical University, China</i> Advanced structure topology and shape optimization in ESAC group. (8:40-9:20)</p> |
| 9:20-9:50 | Tea Break 茶歇 |
| UTC-NPU Special Session | |

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| <p>Keynote</p> <p>Presentations</p> <p>主题报告</p> <p>9:50-10:30</p> | <p>CHAIRMAN: <i>Profs. ZAPICO Jose Luis and MOUMNI Ziad</i></p> <p>1. <i>Prof. BREITKOPF Piotr</i> <i>Universit éde Technologie de Compi ègne (UTC), France</i> Multidisciplinary design optimization in computational mechanics. (9:50-10:30)</p> |
| <p>Technical Presentations</p> <p>学术报告</p> <p>10:30-11:50</p> | <p>2. <i>Prof. ROELANDT Jean-Marc</i> <i>Universit éde Technologie de Compi ègne (UTC), France</i> Modeling of behavior of metal-oxyde interfaces. (10:30-10:50)</p> <p>3. <i>Prof. KNOPF-LENOIR Catherine</i> <i>Universit éde Technologie de Compi ègne (UTC), France</i> Optimal design of urban patterns to improve the energetic performance of the buildings. (10:50-11:10)</p> <p>4. <i>Dr. GUGLIELMETTI Aurore</i> <i>Northwestern Polytechnical University, China</i> Numerical study on the magnetic pulse process for welding. (11:10-11:30)</p> <p>5. <i>Asso. Prof. XIAO Manyu 肖曼玉</i> <i>Northwestern Polytechnical University, China</i> Multidisciplinary Design Optimization with Reduced Order Modeling (ROM). (11:30-11:50)</p> |
| <p>11:50-12:50</p> | <p>Buffet (ZHH) 自助餐 (正禾宾馆)</p> |
| <p>Lunch break 午休</p> | |
| <p>Technical Presentations</p> <p>学术报告</p> <p>14:00-15:40</p> | <p>Chairman: <i>Profs. BECKERS Pierre and CHUA Hui Tong</i></p> <p>1. <i>Prof. ZAPICO Jose Luis</i> <i>University of Oviedo, Campus de Gijón, Spain</i> Dynamic modeling and identification of the Uniovi Structure. (14:00-14:20)</p> <p>2. <i>Prof. COELHO Rajan Filomeno</i> <i>Universit éLibre de Bruxelles (ULB), Belgium</i> Multicriteria evolutionary optimization of truss structures with mixed variables. (14:20-14:40)</p> <p>3. <i>Prof. ABOUDI Said</i> <i>Universit éde Technologie de Belfort-Montb éiard (UTBM), France</i> Performance Analysis of the Axisymmetric Laminar Compressible Micro-Nozzle Flow under Heat Transfer Conditions. (14:40-15:00)</p> <p>4. <i>Asso. Prof. WEI Peng 魏鹏</i></p> |

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| | <p><i>South China University of Technology, China</i> A modified stiffness spreading method for layout optimization of truss structures. (15:00-15:20)</p> <p>5. <i>Dr. HU Naigang 胡乃刚</i> <i>Xidian University, China</i> Electro-mechanical integrated robust optimization of reflector antennas under random factors. (15:20-15:40)</p> |
| 15:40-16:00 | Tea Break 茶歇 |
| <p>Technical Presentations 学术报告 16:00-17:20</p> | <p>Chairman: <i>Profs. DANG Van Ky and ABOUDI Said</i></p> <p>1. <i>Prof. GAO Lizhen</i> <i>Taiyuan University of Technology, China</i> Experimental and design optimization for a zero emission process from methane to electricity. (16:00-16:20)</p> <p>2. <i>Asso Prof. LI Fangyi 李方义</i> <i>Changsha University of Science and Technology, China</i> An uncertain multi-objective multidisciplinary design optimization method based on interval description of uncertainty. (16:20-16:40)</p> <p>3. <i>Asso Prof. XIA Qi 夏奇</i> <i>Huazhong University of Science and Technology, China</i> Tailoring stress in a local region to enhance performance of piezoresistive sensors through shape and topology optimization. (16:40-17:00)</p> <p>4. <i>PhD ZHAO Fei 赵飞</i> <i>Xidian University, China</i> The topology optimization design of the meshless method based on Pareto optimality theory. (17:00-17:20)</p> |
| 18:00-20:00 | Dinner (ZHH) 晚餐 (正禾) |

8 November 2012

8:00-17:00 Tour (Terracotta Army, Huaqing Pool) 旅游观光 (兵马俑、华清池)

9 November 2012

8:00-17:00 Visiting ESAC Lab, History Museum of NPU and Xidian University

参观 ESAC 实验室、西工大校史馆和西安电子科技大学