

Advances in Topology and Material Optimization – Methods and Industrial Applications

September 23 - 25, 2009, Copenhagen, Denmark



Preliminary program for the PLATO-N International Workshop

Advances in Topology and Material Optimization — Methods and Industrial Applications

23—25 September, 2009

Technical University of Denmark, Denmark

	September 23, 2009	September 24, 2009	September 25, 2009
08.30 – 09.30	Registration		
09.30 – 10.00	Welcome to PLATO-N	Plenary presentation	Plenary presentation
10.00 – 10.30	Plenary presentation	Plenary presentation	Plenary presentation
10.30 – 11.00	Plenary presentation	Coffee break	Coffee break
11.00 – 11.30	Coffee break	Presentation	Presentation
11.30 – 12.00	Presentation	Presentation	Presentation
12.00 – 12.30	Presentation	Presentation	Presentation
12.30 – 13.00	Lunch	Lunch	Lunch
13.00 – 13.30	Lunch	Lunch	Lunch
13.30 – 14.00	Presentation	Lunch	
14.00 – 14.30	Presentation	Presentation	
14.30 – 15.00	Presentation	Presentation	
15.00 – 15.30	Coffee break	Presentation	
15.30 – 16.00	Presentation	Coffee break	
16.00 – 16.30	Presentation	Presentation	
16.30 – 18.30	Poster session and welcome reception	Presentations	
19.00 –		Conference dinner	

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September 23, Morning session (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
08.30 – 09.30		Registration
09.30 – 09.40	Mathias Stolpe	Welcome and practicalities
09.40 – 10.00	Martin P. Bendsøe	Introduction to the PLATO-N project <i>M.P. Bendsøe</i>
10.00 – 11.00	Michael Stingl	Free Material Optimization and the PLATO-N software <i>M. Stingl and M. Kočvara</i>
11.00 – 11.30		Coffee break
11.30 – 12.00	Gábor Bodnár	FMO Results Interpretation: Supporting the Development of Design Concepts <i>G. Bodnár</i>
12.00 – 12.30	Michael Bogomolny	Laminate Interpretation of Results from Free Material Optimization <i>M. Bogomolny, M. Stolpe, and M.P. Bendsøe</i>
12.30 – 13.30		Lunch break

September 23, Afternoon session I (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
13.30 – 14.00	Thomas Lehmann	MISQP - An SQP Method for Mixed-Integer Optimization <i>T. Lehmann and K. Schittkowski</i>
14.00 – 14.30	Eduardo Munoz	Global optimization by Benders decomposition in structural optimization <i>E. Munoz and M. Stolpe</i>
14.30 – 15.00	Christian G. Hvejsel	Failure Constraints for Discrete Material Optimization <i>C.G. Hvejsel and E. Lund</i>
15.00 – 15.30		Coffee break

September 23, Afternoon session II (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
15.30 – 16.00	Peter D. Dunning	Introducing Loading Uncertainty in Topology Optimization <i>P. Dunning, H.A. Kim, and G. Mullineux</i>
16.00 – 16.30	Franz-Joseph Barthold	Applications of singular value decomposition in structural optimization <i>F-J. Barthold and N. Gerzen</i>

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September 23, Poster session (DTU Mathematics, Building 303S)		
Time	Presenting author	Title
16.30 – 18.30	Jan Fiala	Academic Benchmark Cases in PLATOLib <i>J. Fiala, R. Boyd, M. Bogomolny, and M. Kočvara</i>
16.30 – 18.30	Esben Lindgaard	A Comparison of Linear Versus Nonlinear Buckling Formulation for the Optimization of Composite Structures <i>E. Lindgaard and E. Lund</i>
16.30 – 18.30	Erik Lund	From Topology to Detailed Design of Multi-Material Laminated Composite Structures <i>E. Lund, C.G. Hvejsel, and E. Lindgaard</i>
16.30 – 18.30	Nam Nguyen Canh	A method for solving discrete topology optimization problems <i>N. Nguyen Canh and M. Stolpe</i>
16.30 – 18.30	Peter Nielsen	Iso-geometric analysis and shape optimization in mechanical engineering <i>P.N. Nielsen and D.M. Nguyen</i>

September 23, PLATO – N system demonstration (DTU Mathematics, Building 303S)		
Time	Presenting author	Title
16.30 – 18.30	Michael Stingl	Demonstration of the PLATO-N system
16.30 – 18.30	Stefanie Gaile	Demonstration of the PLATO-N system
16.30 – 18.30	Gabor Bodnar	Demonstration of the PLATO-N system
16.30 – 18.30	Nam Nguyen Canh	Demonstration of the PLATO-N system

September 24, Morning session (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
09.30 – 10.30	Thomas A. Grandine	Geometry Generation for Design Optimization <i>T.A. Grandine</i>
10.30 – 11.00		Coffee break
11.00 – 11.30	Markus J.D. Wagner	PLATO-N in an industrial context <i>M.J.D. Wagner and J. Keller</i>
11.30 – 12.00	Claus B.W. Pedersen	Practical industrial topology optimization applications including non-linear modelling and automated interpretations for verification modeling <i>C.B.W. Pedersen</i>
12.00 – 12.30	Stefanie Gaile	Free Material Optimization for Naghdi Shells <i>S. Gaile, G. Leugering, and M. Stingl</i>
12.30 – 14.00		Lunch break

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September 24, Afternoon session I (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
14.00 – 14.30	Sonja Lehmann	A Feasible Sequential Convex Programming Method for Free Material Optimization <i>S. Lehmann, K. Schittkowski, and C. Zillober</i>
14.30 – 15.00	Luba Tetrushvili	A Sequential Parametric Convex Approximation Method with Applications to Nonconvex Truss Topology Design Problems <i>A. Beck, A. Ben-Tal, and L. Tetrushvili</i>
15.00 – 15.30	Michal Kočvara	Algorithms of Free Material Optimization <i>M. Kočvara, C. Bogani, J. Fiala, M. Stingl, and Y. Xia</i>
15.30 – 16.00		Coffee break

September 24, Afternoon session II (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
16.00 – 16.30	Jakob Andkjær	Design of grating couplers using topology optimization for the efficient excitation of surface plasmons <i>J. Andkjær, O. Sigmund, S. Nishiwaki, and T. Nomura</i>
16.30 – 17.00	Niels Aage	Topology Optimization of Metallic Microwave Devices <i>N. Aage and O. Sigmund</i>
17.00 – 17.30	René Matzen	Design of Optical Circuit Devices Using Transient Topology Optimization <i>R. Matzen, J.S. Jensen, and O. Sigmund</i>
17.30 – 18.00	Etienne Lemaire	Influence of the material model on local pull-in in electromechanical microdevices topology optimization <i>E. Lemaire, L. van Mieghem, P. Duysinx, and V. Rochus</i>

September 25, Morning session (Scion DTU, Building 373)		
Chair		
Time	Presenting author	Title
09.30 – 10.30	Lars Krog	Integration of Structural Optimization in an Airframe Design Process <i>L. Krog</i>
10.30 – 11.00		Coffee break
11.00 – 11.30	Alexandra A. Gomes	Topology Optimization of Non-Composite Bistable Winglets <i>A.A. Gomes</i>
11.30 – 12.00	Vassili V. Toropov	Optimization of Blended Composite Wing Panels Using Smeared Stiffness Technique and Lamination Parameters <i>V.V. Toropov, D. Liu, D.C. Barton, O.M. Querin</i>
12.00 – 12.30	U. Schramm	A Three-Step Method for Designing Composite Layups <i>U. Schramm, M. Zhou, R. Fleury, and R. Boyd</i>
12.30 –		Lunch

