



# EUROGEN 2015

## Programme

**Monday 14<sup>th</sup> September 2015**

08:00 – 08:40	<b>Registration</b>	
08:40 – 09:00	<b>Opening</b>	
09:00 – 10:00	<b>KN - Prof Marin Guenov</b> <b>Optimization of Complex Systems at Early Design Stage – Friend or Foe</b> Level 1 Auditorium	
10:00 – 10:20	Coffee Break – Exhibition	
	<b>Room A – MS1 - Surrogate-Based Optimization in Aerodynamic Design</b>	<b>Room B - Industrial Application - 1</b>
10:20 – 10:40	Constrained Single-Point Aerodynamic Shape Optimization of the DPW-W1 Wing through Evolutionary Programming and Support Vector Machines. <i>E. Andrés, D. González-Juárez, M. J. Martín-Burgos and L. Carro-Calvo</i>	Isogeometric shape optimization of shell structures including surface effects on the nanoscale. <i>S.-H. Ahn, H.-S. Kim and S. Cho</i>
10:40 – 11:00	Efficient Global Optimization method for multipoint airfoil design. <i>D. Cinquegrana and E. Iuliano</i>	Robust Aerodynamic Design Optimization of Aerofoils for Low Reynolds Number Cases. <i>P. Martínez Castro and A. Arias Montaña</i>
11:00 - 11:20	Artificial Neural Networks for Surrogate-based Optimization in Preliminary Aerodynamic Design. <i>P. Dvorák</i>	Elucidation of Influence of Fuels on Hybrid Rocket Using Visualization of Design-Space Structure. <i>K. Chiba, S. Watanabe, M. Kanazaki, K. Kitagawa and T. Shimada</i>
11:20 – 11:40	Application of Surrogate-based Optimization Techniques to Aerodynamic Design Case. <i>E. Iuliano and D. Quagliarella</i>	Integrated Systems for Aerodynamic Shape Optimisation. <i>D. Di Pasquale, T. Kipouros, C. Holden and M. Savill</i>
11:40 – 12:00	A Review of Surrogate Modeling Techniques for Aerodynamic Analysis and Optimization: Current Limitations and Future Challenges in Industry. <i>R. Yondo Mine, K.-K. Bobrowski, Esther Andrés and E. Valero</i>	Genetic Algorithm Applied to Design Knowledge Discovery of Launch Vehicle Using Clustered Hybrid Rocket Engine. <i>M. Kanazaki, K. Chiba, S. Ito, M. Nakamiya, K. Kitagawa and T. Shimada</i>
12:00 – 12:20	Use of Surrogate Models for the Global Optimization of the Shapes of Flying Configurations, in Supersonic Flow. <i>A. Nastase</i>	
12:20 – 12:40	Enabling of Large Scale Aerodynamic Shape Optimization through POD-based Reduced-Order Modeling and Free Form Deformation. <i>A. Scardigli, R. Arpa and H. Telib</i>	
12:40 – 13:40	Lunch – Exhibition	

13:40 – 14:40	<b>KN - Prof Karen Willcox</b> <b>Multifidelity Methods for Design, Optimization and Uncertainty Quantification</b> Level 1 Auditorium	
14:40 – 15:00	Coffee Break – Exhibition	
	<b>Room A - MS2 - Adjoint Methods for Steady &amp; Unsteady Optimization - 1</b>	<b>Room B - Industrial Application - 2</b>
15:00 – 15:20	Optimal control analysis in temperature field considering moving body based on adjoint equation and fictitious domain finite element methods. <i>T. Kurahashi</i>	Comparison of Multi Objective Algorithms for Discrete Event Simulation Based Turbine Assembly Model Optimization. <i>N. Prajapat, K. Veju and A. Tiwari</i>
15:20 – 15:40	Initial waveform optimization based on the adjoint variable and the finite element methods. <i>S. Tai and T. Kurahashi</i>	Optimization of Extended Surfaces on Tubes of the Radiant Section of Fired Heaters Using the Response Surface Methodology. <i>I. Silva and M. Colaco</i>
15:40 – 16:00	Shape optimization of corrosion using temperature history observed on reinforcement concrete based on the adjoint variable and the finite element methods. <i>T. Kurosawa, T. Kurahashi, H. Oshita, K. Maruoka and T. Iyama</i>	A New Rich Vehicle Routing Problem Model and Benchmark Resource. <i>K. Sim, E. Hart, T. Pigden and N. Urquhar</i>
16:00 – 16:20	Application of the adjoint method for the reconstruction of the boundary condition in unsteady shallow water flow simulation. <i>A. Lacasta, D. Caviedes-Voulli�me and P. Garcia-Navarro</i>	Creating Optimised Employee Travel Plans. <i>N. Urquhart and E. Hart</i>
16:20 – 16:40	Optimization of a Synthetic Jet Actuation for Separation Control on an Airfoil. <i>A. Nemili, E. �zkaya, N. Gauger, F. Kramer and F. Thiele</i>	Geometric continuity constraints for NURBS patches in shape optimisation. <i>X. Zhang and J.D. Mueller</i>
19:00 – 20:00	Welcome Drink Reception at the Glasgow City Chambers	

## Tuesday 15<sup>th</sup> September 2015

08:00 – 09:00	<b>Registration</b>	
09:00 – 10:00	<b>KN - Prof Olivier Pironneau</b> <b>Risk, Optimization and Meanfield Type Control</b> Level 1 Auditorium	
10:00 – 10:20	Coffee Break - Exhibition	
	<b>Room A - MS2 - Adjoint Methods for Steady &amp; Unsteady Optimization - 2</b>	<b>Room B - MS3 - Multi-disciplinary Design Optimization</b>
10:20 – 10:40	Checkpointing with time gaps for unsteady adjoint CFD. <i>J. Hüchelheim and J.D. Müller</i>	A Novel Method for Inverse Uncertainty Propagation. <i>X. Chen, A. Molina-Cristobal, M. D. Guenov, V. C. Datta and A. Riaz</i>
10:40 – 11:00	Gradient-based and Adjoint-based Sensors for R-refinement - Application and Comparison. <i>M. Gugala, J. Hüchelheim, S. Xu and J. Müller</i>	Robust Design Optimization of Mars Entry Probe with Integrated Evidence Computations. <i>L. Hou, A. Pirzada, Y. Cai and H. Ma</i>
11:00 - 11:20	Continuous adjoint based optimization using a pseudocompressibility implicit solver in OpenFOAM. <i>C. Vezyris, E. Papoutsis-Kiachagias, I. Kavvadias and K. Giannakoglou</i>	Multiobjective optimization in coupled-field of an Interior Permanent Magnet Motor. <i>S. Poles, B. Van Der Heggen, Y. Saitoh, M. Hashiba, M. Kita and T. Koga</i>
11:20 – 11:40	Shape Optimization of Wind Turbine Blades using the Continuous Adjoint Method and Volumetric NURBS on a GPU Cluster. <i>K. Tsiakas, X. Trompoukis, V. Asouti and K. Giannakoglou</i>	
	<b>Room A - MS2 - Adjoint Methods for Steady &amp; Unsteady Optimization - 2</b>	<b>Room B - Industrial Application - 3</b>
11:40 – 12:00	Aerodynamic Shape Optimization Using the Adjoint-based Truncated Newton Method. <i>M. G. Nejad, E. M. Papoutsis-Kiachagias and K. C. Giannakoglou</i>	PSO Based Wind Farm Controller, <i>Tanvir Ahmad, Peter Matthews and Behzad Kazemtabrizi</i>
12:00 – 12:20	Implementation and measurements of an efficient Fixed Point Adjoint. <i>A. Taftaf, L. Hascoet and V. Pascual</i>	Binary Coded versus Real Coded Genetic Algorithms for Kriging Correlation Parameter Optimization, <i>Sang-Jin Kim, Ho-Sung Hwang and Heung-Cheol You</i>
12:20 – 12:40		Uncertainty based Optimal Planning of Residential Building Stocks Retrofits, <i>Roberto Ricciu, Luigi Antonio Besalduch, Edmondo Minisci, Andrea Manuello Bertetto</i>
12:40 – 13:40	Lunch – Exhibition	

13:40 – 14:40	<b>KN - Prof Oliver Schütze</b> <b>Pareto Explorer: a Global/Local Exploration Tool for Many Objective Optimization Problems</b> Level 1 Auditorium	
14:40 – 15:00	Coffee Break – Exhibition	
	<b>Room A - MS2 - Adjoint Methods for Steady &amp; Unsteady Optimization - 3</b>	<b>Room B - MS4 - Holistic Optimization in Marine Design</b>
15:00 – 15:20	One-Shot Optimisation with Fixed-Point Discrete Adjoint of SIMPLE-type Incompressible Solvers. <i>S. Akbarzadeh, Y. Wang, X. Zhang and J.D. Müller</i>	Simulation-based Design Optimization by Sequential Multi-criterion Adaptive Sampling and Dynamic Radial Basis Functions. <i>M. Diez, S. Volpi, A. Serani, F. Stern and E. F. Campana</i>
15:20 – 15:40	Improving Efficiency of a Discrete Adjoint CFD Code for Design Optimization Problems. <i>Z. Dastouri and U. Naumann</i>	Upfront CAD - Parametric modeling techniques for shape optimization. <i>S. Harries, C. Abt and M. Brenner</i>
15:40 – 16:00	Sensitivity computation for ducted flows using adjoint of implicit pressure-velocity coupled solver based on Foam. <i>A. Sen, M. Towara and U. Naumann</i>	Applications of Holistic Ship Theory in the Optimization of Ship Design and Operation. <i>L. Nikolopoulos and E. Boulougouris</i>
16:00 – 16:20	A Contribution to the Unsteady continuous adjoint method for the optimization of jet-based flow control systems. <i>C. Kapellos, I. Kavvadias, E. Papoutsis-Kiachagias and K. Giannakoglou</i>	
16:20 – 16:40	Aerodynamic Optimization of Car Shapes using the Continuous Adjoint Method and an RBF Morpher. <i>E. Papoutsis Kiachagias, S. Porziani, C. Groth, M. Evangelos Biancolini, E. Costa and K. Giannakoglou</i>	
19:00 – 22:30	Gala Dinner at Barony Hall	

### Wednesday 16<sup>th</sup> September 2015

09:00 – 10:00	<b>KN - Prof Thomas Baeck</b> <b>Solving Optimization Problems in Industry</b> Level 1 Auditorium	
10:00 – 10:20	Coffee Break - Exhibition	
	<b>Room A - MS5 - Game Strategies Combined with Evolutionary Computation - From Theory to Applications</b>	<b>Room B - MS6 - Optimization under Uncertainty</b>
10:20 – 10:40	Designing Networks in Cooperation and EAs. <i>E. D'Amato, E. Daniele and L. Mallozzi</i>	Innovative methodologies for Robust Design Optimization with large number of uncertainties using modeFRONTIER. <i>A. Clarich and R. Russo</i>
10:40 – 11:00	A Diversity Dynamic Territory Nash Strategy in Evolutionary Algorithms: Enhancing Performances in Reconstruction Problems in Structural Engineering. <i>D. Greiner, J. Périaux, J. M. Emperador, B. Galvan and G. Winter</i>	An alternative formulation for design under uncertainty. <i>F. Fusi, P. M. Congedo, G. Geraci and G. Iaccarino</i>
11:00 - 11:20	Augmented Lagrangian approach for constrained potential games. <i>L. Mallozzi and D. Quagliarella</i>	Robust Airfoil Design in the Context of Multi-Objective Optimization. <i>L. Kusch and N. R. Gauger</i>
11:20 – 11:40	Interactive Inverse Modeling Based Multiobjective Evolutionary Algorithm. <i>K. Sindhya and J. Hakanen</i>	On the estimation of risk metrics for design optimization under uncertainty. <i>M. Padulo, S. Prigent and J. Delbove</i>
11:40 – 12:00	Multi-Disciplinary Optimization of Air-breathing Hypersonic Vehicle Using Pareto Games and Evolutionary Algorithms. <i>P. Wua, Z. Tang and J. Périaux</i>	Uncertainty Sources in the Baseline Configuration for Robust Design of a Supersonic Natural Laminar Flow Wing-Body. <i>D. Quagliarella and E. Iuliano</i>
12:00 – 12:20		Efficient Solution of Min-Max Problems with a Combination of Surrogate Models and Inflationary Differential Evolution. <i>M. Vasile and M. Di Carlo</i>
12:20 – 12:40		Polynomial Representation of Model Uncertainty in Dynamical Systems. <i>M. Vasile</i>
12:40 – 13:40	Lunch – Exhibition	
13:40 – 14:40	<b>KN - Dr Domenico Quagliarella</b> <b>Value-at-risk and Conditional Value-at-risk in Optimization Under Uncertainty</b> Level 1 Auditorium	
14:40 – 15:00	Coffee Break – Exhibition	
	<b>Room A - NS - Algorithms Development and Testing</b>	<b>Room B - Topology Optimisation</b>
15:00 – 15:20	Comparison of multi-objective approaches to the real-world production scheduling. <i>G. Papa and P. Korošec</i>	Topology Optimization using GPGPU. <i>S. Gavranovic, D. Hartmann and U. Wever</i>
15:20 – 15:40	Differential Evolution with Local Search and Re-Initialization. <i>L. Peng, M. Vasile, G. Dai and H. Hu</i>	Applications and Cost Effectiveness of Topology Optimisation for Machine Tools. <i>G. Kehl</i>
15:40 – 16:00	Improved archiving and search strategies for Multi Agent Collaborative Search. <i>L. A. Ricciardi and M. Vasile</i>	Topology Optimization of Flow Channels with Heat Transfer Using a Genetic Algorithm Assisted by the Kriging Model. <i>M. Yoshimura, T. Misaka, K. Shimoyama and S. Obayashi</i>
16:00 – 16:20	Closing	