

MONDAY, SEPTEMBER 15

17:00–17:45 Lahti City Tour by Bus

Departures from the hotels at 17:00. The tour ends at Lahti City Hall for the Welcome Reception.

18:00–19:00: Welcome Reception at Lahti City Hall

Address: Harjukatu 31, Lahti

TUESDAY, SEPTEMBER 16

8:00	Bus transportation from conference hotels to the university campus
8:00	Registration takes place at the main entrance of LUT University Address: Mukkulankatu 19, Lahti

OPENING AND PLENARY PRESENTATIONS, Auditorium 1

9:00-9:15	Opening of the Conference Welcome address by Jari Hämäläinen, EUROGEN 2025 Conference Chair Welcome address by Jaana Sandström, Vice rector of LUT University
9:15-9:45	Plenary presentation by Dietrich Knörzer: <i>30 Years EUROGEN - Evolutionary Algorithms in Engineering and Computer Science</i>
9:45-10:30	Plenary presentation by David Greiner: <i>Hybridizing Surrogate Modeling and Evolutionary Algorithms for Optimum Engineering Design Problems in Computational Engineering</i>
10:30-11:00	COFFEE BREAK

PARALLEL SESSIONS	MINISYMPOSIUM ON MACHINE LEARNING AND DATA-DRIVEN INNOVATIONS IN AERODYNAMIC OPTIMIZATION AND UNCERTAINTY QUANTIFICATION (I) proposed by Esther Andres Perez, Rodrigo Castellanos, Domenico Quagliarella Session chair: D. Quagliarella	THEMATIC SESSION ON TOPOLOGY OPTIMIZATION
11:00-12:30	Auditorium 1	Lecture hall A122
11:05-11:25	EXPLORING UNCERTAINTY IN MULTIDISCIPLINARY WING DESIGN PROCESSES Marta A. Martín , Jose Fernández Montes, Sergio De Lucas-Bodas, Andrés Mateo-Gabín	ON THERMODYNAMIC TOPOLOGY OPTIMIZATION WITH AN IMPLEMENTED THIRD MEDIUM REGULARIZATION SCHEME Max von Zabiensky , Dustin R. Jantos, Philipp Junker

11:25-11:45	GRADIENT-ENHANCED BAYESIAN OPTIMIZATION FOR AERODYNAMIC DESIGN Emre Özkaya , Long Chen, and Nicolas R. Gauger	A FICTITIOUS PHYSICAL MODEL FOR VISIBILITY EVALUATION AND ITS APPLICATION IN ENGINEERING DESIGN Xiao Huang , Kaiwen Guan, and Takayuki Yamada
11:45-12:05	A DATA-DRIVEN APPROACH FOR TURBULENCE MODELLING OF LAMINAR SEPARATION BUBBLES F. A. D'Aniello , G. Longobardo, P. Catalano, D. Quagliarella	EVOLUTIONARY TOPOLOGY OPTIMIZATION OF MULTIPRESSURE ACTUATION COMPLIANT MECHANISM WITH A VIRTUAL FLUX METHOD Vitor H. L. C. Lima , Renato Pavanello
12:05-12:25	PROPELLER BLADES SHAPE OPTIMIZATION USING HYBRID GENETIC ALGORITHMS AND SURROGATE MODELS J. Berrueco-Fernández , I. Robledo, E. Andrés, R. Castellanos	TOPOLOGY OPTIMIZATION OF MAGNETIC SHIELDS USING LEVEL SET METHOD WITH BODY-FITTED MESH ADAPTATION Shingo Hiruma

12:30-13:45	LUNCH	
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PLENARY PRESENTATIONS, Auditorium 1

13:45-14:30	Plenary presentation by Cornelia Grabe: The Potential of Data-Driven Turbulence Modeling for Industrially Relevant Aerodynamic Applications	
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PARALLEL SESSIONS	MINISYMPOSIUM ON CLEAR SESSION: CONTROL DESIGN FOR ENVIRONMENTAL ADVANCEMENT AND RESEARCH (I) proposed by S. Bezzaoucha, C. Choquet, É. Comte Session chairs: C. Choquet, É. Comte	THEMATIC SESSION ON UNCERTAINTY QUANTIFICATION
	14:35-16:00 Auditorium 1 OPTIMAL CONTROL FOR LAKE EUTROPHICATION: A DIRICHLET BOUNDARY CONTROL PROBLEM É. Comte , C. Choquet	Lecture hall A122 ADAPTIVE BI-FIDELITY MONTE CARLO ESTIMATION FOR RANDOM ELLIPTIC PDES Dustin Mühlhäuser
	15:00-15:20 POLYTOPIC APPROACH FOR STABILITY & CONTROL DESIGN OF SAINT-VENANT EQUATIONS Abderrazzak El Ammari, Souad Bezzaoucha , Catherine Choquet	CFD-DRIVEN ROBUST OPTIMIZATION OF TRANSONIC AERODYNAMIC SHAPES Quentin Bennehard , Marco Carini, Gregory Dergham

15:20-15:40	OPTIMIZING CROP IRRIGATION UNDER BIOLOGICAL AND OPERATIONAL CONSTRAINTS WITH METEOROLOGICAL UNCERTAINTY Ruben Chenevat , Bruno Cheviron, Alain Rapaport, Sébastien Roux	GAUSSIAN PROCESSES FOR UNCERTAINTY QUANTIFICATION AND FAST EMULATION OF CHEMICAL KINETICS Sarah M. Askevold , Ángel F. García-Fernández, Brianna Heazlewood, Suzie C. Abbs, Simon Maskell
15:40-16:00	A MACHINE LEARNING ALGORITHM FOR WATER QUALITY CONTROL C. Choquet , T. Pélissié de Montémont	A MULTIOBJECTIVE APPROACH TO EVALUATE SUITABLE BATTERY TECHNOLOGIES TO POWER HYBRID MEDIUM-RANGE AIRCRAFT Nicolina Montella , Domenico Quagliarella
16:00-16:30	REFRESHMENTS	
PARALLEL SESSIONS	MINISYMPOSIUM ON OPTIMIZATION MEETS INVERSE PROBLEMS Session chair: Tapio Helin	THEMATIC SESSION ON ADJOINT-BASED SHAPE OPTIMIZATION
16:30-18:00	Auditorium 1	Lecture hall A122
16:35-16:55	RECOVERY OF TRANSVERSELY-ISOTROPIC ELASTIC MATERIAL PARAMETERS IN INDUCTION MOTOR ROTORS Ville-Petteri Manninen , Hanz Cheng, Tapio Helin, Timo Holopainen, Juha Jokinen, Andreas Rupp, Samu Sorvari	ADJOINT BASED SHAPE OPTIMIZATION FOR MULTIPHASE FLOWS WITH PHASE CHANGE DUE TO BOILING Vishal Garg , Wilfried Edelbauer, Gabor Janiga, Manolis Gavaises
16:55-17:15	QUASI-MONTE CARLO INTEGRATION FOR BAYESIAN DESIGN OF EXPERIMENT PROBLEMS GOVERNED BY PDES Vesa Kaarnioja , Claudia Schillings	ADJOINT-BASED SHAPE OPTIMIZATION IN SMOOTHED PARTICLE HYDRODYNAMICS Eduardo Di Costanzo , Niklas Kühl, Jean-Christophe Marongiu, Thomas Rung
17:15-17:35	ROBUST ACCELERATED PGET RECONSTRUCTION FOR SAFE DISPOSAL OF SPENT NUCLEAR FUEL Tommi Heikkilä , Sara Heikkinen, Tapio Helin	CAD-INTEGRATION FOR GRADIENT-BASED SHAPE OPTIMIZATION USING THE ALGORITHMICALLY DIFFERENTIATED PYTHONOCC LIBRARY Mladen Banović , Adam Büchner, Thomas E. Hafemann, Patrick Wegener, Arthur Stück
17:35-17:55	EDGE-PROMOTING SEQUENTIAL BAYESIAN EXPERIMENTAL DESIGN FOR X-RAY IMAGING Tapio Helin, Nuutti Hyvönen , Juha-Pekka Puska	CONSISTENT CONTINUOUS ADJOINT TO A STEADY ISOTHERMAL HYDRODYNAMIC SOLVER, INCLUDE CAVITATION A. Bekhradinasab , EM Papoutsis-Kiachagias, K. C. Giannakoglou

Bus transportation to conference hotels.

WEDNESDAY, SEPTEMBER 17

PLENARY PRESENTATIONS, Auditorium 1

8:00 Bus transportation from conference hotels to the campus

9:00-9.45 **Plenary presentation by Rainald Löhner:** *High-Fidelity Digital Twins: Detecting and Localizing Weaknesses in Structures*

9:45-10:30 **Plenary presentation by Marko Mäkelä:** *Nonsmooth Optimization: From Theory to Methods and Applications*

10:30-11:00 **COFFEE BREAK**

PARALLEL SESSIONS	MINISYMPOSIUM ON ADVANCED METHODS FOR TOPOLOGY AND SHAPE OPTIMIZATION proposed by Daniela Masarczyk, Georgia Kikis Session chair: Daniela Masarczyk Auditorium 1	THEMATIC SESSION ON ARTIFICIAL INTELLIGENCE IN OPTIMIZATION Lecture hall A122
11:00-12:45		
11:05-11:25	CFD-BASED RE-DESIGN OF GHIBLI ARC-JET NOZZLE Roberto Carbone , Antonio Schettino, Domenico Quagliarella, Jan O. Pralits	OPTIMIZATION OF INJECTION MOULDING COOLING PHASES USING ARTIFICIAL INTELLIGENCE TECHNIQUES T.Marques , A.Gaspar-Cunha, J.B.Melo, A.Pontes
11:25-11:45	MULTI-FIDELITY APPROACH TO THE DESIGN O HYPERSONIC VEHICLES Roberto Carbone, Domenico Quagliarella, Antonio Schettino, Jan O. Pralits	TOWARDS PREDICTIVE MAINTENANCE IN HYDROGEN STORAGE AND TRANSPORTATION USING AI AND MULTIOBJECTIVE DECISION SUPPORT Robin van der Laag , Michael Emmerich, Thomas Bäck, Yingjie Fan
11:45-12:05	CHECKERBOARD-FREE TOPOLOGY OPTIMIZATION USING POLYGONAL FINITE ELEMENTS WITH VORONOI TESSELLATIONS G. Kikis , B. Sauren, C. Birk, S. Klinkel	OPTIMIZING CONFORMAL COOLING CHANNEL DESIGN IN INJECTION MOLDING USING MOLDEX3D AND AI TECHNIQUES J. B. Melo , T. Marques, A. Gaspar-Cunha, A. J. Pontes
12:05-12:25	TOPOLOGY OPTIMIZATION WITH REINFORCED CONCRETE FOR RESOURCE EFFICIENT CIVIL ENGINEERING DESIGN Daniela Masarczyk , Minh T. Tran, Detlef Kuhl	PHYSICS-INFORMED KOLMOGOROV-ARNOLD NETWORKS FOR OSCILLATORY DIFFERENTIAL EQUATIONS Michael Crocoll
12:25-12:45	THERMODYNAMIC TOPOLOGY OPTIMIZATION OF PHOTONICS Sebastian Wolf , Dustin R. Jantos, and Philipp Junker	STRUCTURAL OPTIMIZATION FOR FCC-EE INTERACTION REGION SUPPORT STRUCTURES Francesco Francesini , Manuela Boscolo, Pier Paolo Valentini

12:45-14:00 **LUNCH**

PARALLEL SESSIONS	MINISYMPOSIUM ON MACHINE LEARNING AND DATA-DRIVEN INNOVATIONS IN AERODYNAMIC OPTIMIZATION AND UNCERTAINTY QUANTIFICATION (II) proposed by Esther Andres Perez, Rodrigo Castellanos, Domenico Quagliarella Session chair: Domenico Quagliarella	THEMATIC SESSION ON MULTI-OBJECTIVE OPTIMIZATION (I)
	14:00-15:30 Auditorium 1	Lecture hall A122
	14:05-14:25 NEURAL NETWORK OPTIMIZATION FOR DATA-EFFICIENT GENERALIZATION IN SCIENTIFIC MACHINE LEARNING Damiano Squillace , Domenico Quagliarella, Umberto Iemma	COMPUTATIONAL PERSPECTIVES ON MULTI-OBJECTIVE HOME HEALTHCARE ROUTING AND SCHEDULING: FORMULATIONS AND CHALLENGES Soumen Atta , Michael Emmerich, Vítor Basto-Fernandes
	14:25-14:45 MULTI-FIDELITY AIRFOIL SHAPE OPTIMIZATION WITH HYBRID GENETIC ALGORITHM I. Robledo , A. Vilariño, A. Miró, O. Lehmkuhl, R. Castellanos, C. Sanmiguel Vila	DISCUSSION ON THE EFFECT OF AIRFLOW-COOPERATION ON THE AEROSTRUCTURAL OPTIMIZED DESIGN OF A PASSIVE COMPLIANT MORPHING AIRFOIL Keita Kambayashi
	14:45-15:05 SOLVING DISTRIBUTIONALLY ROBUST OPTIMIZATION PROBLEMS EFFICIENTLY VIA SURROGATE MODELS Jan Rottmayer , Long Chen, Nicolas R. Gauger	MULTI-CRITERIA OPTIMIZATION FOR BUILDING SPATIAL DESIGN Ksenia Pereverdieva , André Deutz, Tessa Ezendam, Thomas Bäck, Herm Hofmeyer, Michael Emmerich
	15:05-15:25 PHYSICS-INFORMED NEURAL NETWORK FOR WING AERODYNAMICS Xin Chen , Guangyuan Huang, Ankit Sharma, Atif Riaz, Sergio Jimeno	CAVITATION EROSION OPTIMIZATION IN A HIGH HEAD FRANCIS TURBINE USING EVOLUTIONARY ALGORITHMS S. Stalikas , E. Kontoleon, V. Asouti, K. C. Giannakoglou
15:30-16:00	REFRESHMENTS	

PARALLEL SESSIONS	THEMATIC SESSION ON SURROGATE AND REDUCED-ORDER TECHNIQUES	THEMATIC SESSION ON MULTI-OBJECTIVE OPTIMIZATION (II)
	16:00-17:30 Auditorium 1	Lecture hall A122
16:05-16:25	AUTOMATIC AFFINITY DETECTION FOR CATEGORICAL VARIABLES IN SURROGATE-BASED OPTIMIZATION USING DIMENSIONALITY REDUCTION Charlotte Beauthier , Rajan Filomeno Coelho, Sylvério Pool Marquez, Caroline Sainvitu, Annick Sartenaer	INTERACTIVE MULTIOBJECTIVE OPTIMIZATION IN SUPPORT OF CLIMATE SMART FORESTRY Juho Roponen , Vili Kärkkäinen, Matias Nieminen, Bhupinder Saini, Veera Tahvanainen, Jari Vauhkonen

16:25-16:45	EFFICIENT SHAPE OPTIMIZATION OF TPMS HEAT EXCHANGERS VIA RBF-FD MESHLESS METHOD AND REDUCED ORDER TECHNIQUES Fausto Dicech , Riccardo Zamolo, Lucia Parussini	APPLICATION OF NATURE-INSPIRED OPTIMIZATION TECHNIQUES FOR AUTOMATED FINITE ELEMENT MODEL UPDATING OF A HISTORICAL MASONRY BELL TOWER Shahin Sayyad , Loredana Contrafatto, Simone Scalisi, Davide Li Rosi, Massimo Cuomo
16:45-17:05	CONSTRAINED GEOMETRIC OPTIMIZATION OF IMMERSED BOUNDARIES FOR MODELING HYDRAULIC DIODES L. Groussy , M. Belliard, P. Sagaut, O. Pantz	USING GOAL ATTAINING MULTIOBJECTIVE OPTIMIZATION TO OBTAIN TARGET DESIGN PARAMETER OF NON-PNEUMATIC TIRE Kelvin Lee Han Yong , Wonhyuck Lee
17:05-17:25	MULTI-FIDELITY OPTIMISATION STRATEGY BASED ON HYBRID METHODS Agustí Porta Ko, Sergio González Horcas , Jordi Pons-Prats, Gabriel Bugada	TECHNO-ECONOMIC MODELING OF HOURLY WIND-BASED HYDROGEN PRODUCTION WITH LECTROLYZER OPTIMIZATION Matti Kurki
	Bus transportation to hotels and to the conference banquet	
19:00–22:00	Conference Banquet in Bistro & Bar Kokka , Address Borupinraitti 4	

THURSDAY, SEPTEMBER 18

8:00	Bus transportation from conference hotels to the university campus	
PARALLEL SESSIONS	MINI-SYMPOSIUM ON PARTIAL DIFFERENTIAL EQUATIONS-GOVERNED MODELS AND OPTIMIZATION IN ENGINEERING APPLICATIONS (I) proposed by Rabia Altunay, Jarkko Suuronen Session chair: Rabia Altunay	THEMATIC SESSION ON BAYESIAN OPTIMIZATION
9:00-10:30	Auditorium 1	Lecture hall A122
9:05-9:25	COMPUTATIONAL METHODS FOR DESIGN OPTIMIZATION Eero Immonen	TOWARD SYSTEM-LEVEL CO-DESIGN: A MULTI-LEVEL SURROGATE FRAMEWORK FOR POWER CONVERTER COMPONENT OPTIMIZATION Shuai Guo , Qian Li
9:25-9:45	IDENTIFYING HIDDEN PARAMETERS IN CELLULAR AUTOMATA WITH NEURAL NETWORKS Valery N. Ashu , Zhisong Liu, Andreas Rupp, Heikki Haario	PARAMETRIC OPTIMIZATION OF RIGID BAFFLES ON LIQUIDFILLED TANKS SUBJECTED TO SLOSHING USING XFEM AND BAYESIAN OPTIMIZATION Luc Laurent , Antoine Legay, Christophe Hoareau

9:45-10:05	TOPOLOGY OPTIMIZATION OF PERSONALIZED DRUGS Rabia Altunay	OPERATOR-THEORETIC AND QUANTUM-INSPIRED FRAMEWORKS FOR DATA-DRIVEN MODELING OF NONLINEAR DYNAMICAL SYSTEMS Joanna Slawinska, Dimitris Giannakis
10:05-10:25	MATHEMATICAL MODELING OF DRUG DISSOLUTION Jarkko Suuronen	CORRECTING BIAS IN DYNAMICAL MODELS Miracle Amadi, Lassi Roininen

10:30-11:00 COFFEE BREAK

PARALLEL SESSIONS	MINI-SYMPOSIUM ON CLEAR SESSION: CONTROL DESIGN FOR ENVIRONMENTAL ADVANCEMENT AND RESEARCH (II) proposed by S. Bezzaoucha, C. Choquet, É. Comte Session chairs: C. Choquet, S. Bezzaoucha	MINI-SYMPOSIUM ON PARTIAL DIFFERENTIAL EQUATIONS-GOVERNED MODELS AND OPTIMIZATION IN ENGINEERING APPLICATIONS (II) proposed by Rabia Altunay, Jarkko Suuronen Session chair: Jarkko Suuronen
11:00-12:10	Auditorium 1	Lecture hall A122
11:05-11:25	HOW TO SURVIVE SEVERE ISRUPTIONS IN ENERGY SYSTEMS Ghazaleh Saboori, Soumen Atta, Giovanni Misitano, Babooshka Shavazipour	TOPOLOGY OPTIMIZATION OF VISCOELASTIC COMPOSITES USING COMPLEX-VALUED HOMOGENIZATION Hiroaki Deguchi, Kei Matsushima, Takayuki Yamada
11:25-11:45	MULTI-STAGE MULTI-SCENARIO MULTI-OBJECTIVE OPTIMIZATION FOR ADAPTIVE ROBUST ENERGY TRANSITION UNDER EEPUNCERTAINTY Babooshka Shavazipour	BENCHMARKING DISTRIBUTED OPTIMIZATION FORMULATIONS WITH A MULTIDISCIPLINARY FEASIBLE APPROACH FOR AERO-STRUCTURAL AIRCRAFT DESIGN Fabian Volle, Eric Schaar, Yann David
11:45-12:05	MULTI-OBJECTIVE LINEAR PROGRAMMING FOR ENVIRONMENTAL AND ENERGY COSTS IN RENEWABLE ENERGY SITE SELECTION WITH SPATIAL INTERACTION Michael Emmerich, Jonas Schwaab	TOWARDS AERO-STRUCTURAL OPTIMIZATION USING THE NEW CFD SOFTWARE BY ONERA, DLR, AIRBUS (CODA) Markus Widhalm, Fabian Volle, Adam Büchner, Franziska Kasielke

PLENARY PRESENTATION and CLOSING OF THE CONFERENCE, Auditorium 1

12:15 -13:00	Plenary presentation by W. J. Vankan: <i>Design and Optimization of HAR Composite Wings for SMR Aircraft – Multi-Disciplinary Analyses, Sizing, and Wind-Tunnel Experiments</i>
13:00-13:15	CLOSING OF THE CONFERENCE
13:15-14:00	LUNCH
14:15	Bus transportation to Helsinki airport