

MONDAY, SEPTEMBER 15

17:00–18:00 — Light Touch of Lahti: City Tour by Bus

As part of the Welcome Reception, a city tour by bus will be organized.

- Departure: Address: Vapaudenkatu 24, Lahti (next to Hotel Scandic)
- Conclusion: Lahti City Hall, followed by the reception

18:00–19:00 — Welcome Reception

Lahti City Hall, Address: Harjukatu 31, Lahti

TUESDAY, SEPTEMBER 16

8:00	Bus transportation from the conference hotels to the LUT 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 of EUROGEN - Evolutionary Algorithms in Engineering and Computer Science</i> Chair: Tero Tuovinen
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> Chair: Jari Hämäläinen

10:30-11:00	COFFEE BREAK
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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 Session chair: Keita Kambayashi
	11:00-12:30 Auditorium 1	Lecture hall A122

11:05-11:25	DEVELOPMENT OF EFFICIENT EVOLUTIONARY ALGORITHMS BY EXTRACTING IMPLICIT KNOWLEDGE FROM THE OPTIMIZATION PROCESS Zhili Tang , Xin Zhao, Jacques Periaux	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, Nicolas R. Gauger	A FICTITIOUS PHYSICAL MODEL FOR VISIBILITY EVALUATION AND ITS APPLICATION IN ENGINEERING DESIGN Xiao Huang , Kaiwen Guan, 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	TOPOLOGY OPTIMIZATION OF VISCOELASTIC COMPOSITES USING COMPLEX-VALUED HOMOGENIZATION Hiroaki Deguchi , Kei Matsushima, Takayuki Yamada
12:05-12:25	PROPELLER BLADES SHAPE OPTIMIZATION USING HYBRID GENETIC ALGORITHMS AND SURROGATE MODELS J. Berruenco-Fernández , I. Robledo, E. Andrés, R. Castellanos	

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 Chair: Tero Tuovinen	
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 Session chair: Nuutti Hyvönen
14:35-16:00	Auditorium 1	Lecture hall A122
14:40-15:00	OPTIMAL CONTROL FOR LAKE EUTROPHICATION: A DIRICHLET BOUNDARY CONTROL PROBLEM É. Comte , C. Choquet	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. Péliissié 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 Session chair: Rainald Löhner
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	AEROSTRUCTURAL OPTIMIZATION OF THE DLR-F25 TRANSPORT AIRCRAFT SUPPORTED BY ML-SURROGATES FOR CAD Xenofon S. Trompoukis, Varvara G. Asouti, Marina Kontou, Kyriakos C. Giannakoglou
18:10	Bus transportation to conference hotels.	

WEDNESDAY, SEPTEMBER 17

PLENARY PRESENTATIONS, Auditorium 1

8:00	Bus transportation from the conference hotels to the LUT University campus	
9:00-9.45	Plenary presentation by Rainald Löhner: <i>High-Fidelity Digital Twins: Detecting and Localizing Weaknesses in Structures</i> Chair: Kyriakos Giannakoglou	
9:45-10:30	Plenary presentation by Marko Mäkelä: <i>Nonsmooth Optimization: From Theory to Methods and Applications</i> Chair: Emre Özkaya	

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	THEMATIC SESSION ON ARTIFICIAL INTELLIGENCE IN OPTIMIZATION Session chair: David Greiner
11:00-12:30	Auditorium 1	Lecture hall A122
11:05-11:25	CFD-BASED RE-DESIGN OF GHIBLI ARC-JET NOZZLE Roberto Carbone , Antonio Schettino, Domenico Quagliarella, 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
11:25-11:45	CHECKERBOARD-FREE TOPOLOGY OPTIMIZATION USING POLYGONAL FINITE ELEMENTS WITH VORONOI TESSELLATIONS G. Kikis , B. Sauren, C. Birk, S. Klinkel	PHYSICS-INFORMED KOLMOGOROV-ARNOLD NETWORKS FOR OSCILLATORY DIFFERENTIAL EQUATIONS Michael Crocoll

11:45-12:05	TOPOLOGY OPTIMIZATION WITH REINFORCED CONCRETE FOR RESOURCE EFFICIENT CIVIL ENGINEERING DESIGN Daniela Masarczyk, Minh T. Tran, Detlef Kuhl	STRUCTURAL OPTIMIZATION FOR FCC-EE INTERACTION REGION SUPPORT STRUCTURES Francesco Franesini, Manuela Boscolo, Pier Paolo Valentini
12:05-12:25	THERMODYNAMIC TOPOLOGY OPTIMIZATION OF PHOTONICS Sebastian Wolf, Dustin R. Jantos, Philipp Junker	
12:30-13:45	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) Session chair: Jos Vankan
13:45-15:15	Auditorium 1	Lecture hall A122
13:50-14:10	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
14:10-14:30	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
14:30-14:50	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
14:50-15:10		CAVITATION EROSION OPTIMIZATION IN A HIGH HEAD FRANCIS TURBINE USING EVOLUTIONARY ALGORITHMS S. Stalikas, E. Kontoleonos, V. Asouti, K. C. Giannakoglou
15:10-15:40	REFRESHMENTS	

PARALLEL SESSIONS	THEMATIC SESSION ON SURROGATE AND REDUCED-ORDER TECHNIQUES		THEMATIC SESSION ON MULTI-OBJECTIVE OPTIMIZATION (II)	
	Session chair: Cornelia Grabe		Session chair: Marko Mäkelä	
	Auditorium 1		Lecture hall A122	
	15:45-16:05	AUTOMATIC AFFINITY DETECTION FOR CATEGORICAL VARIABLES IN SURROGATE-BASED OPTIMIZATION USING DIMENSIONALITY REDUCTION Charlotte Beauthier , Rajan Filomeno Coelho, Sylvério Pool Marquez, Caroline Sainvitu, Annick Sartenauer	15:45-16:05	INTERACTIVE MULTIOBJECTIVE OPTIMIZATION IN SUPPORT OF CLIMATE SMART FORESTRY Juho Roponen , Vili Kärkkäinen, Matias Nieminen, Bhupinder Saini, Veera Tahvanainen, Jari Vauhkonen
	16:05-16:25	EFFICIENT SHAPE OPTIMIZATION OF TPMS HEAT EXCHANGERS VIA RBF-FD MESHLESS METHOD AND REDUCED ORDER TECHNIQUES Fausto Dicech , Riccardo Zamolo, Lucia Parussini	16:05-16:25	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
	16:25-16:45	CONSTRAINED GEOMETRIC OPTIMIZATION OF IMMERSED BOUNDARIES FOR MODELING HYDRAULIC DIODES L. Groussy , M. Belliard, P. Sagaut, O. Pantz	16:25-16:45	BENCHMARKING DISTRIBUTED OPTIMIZATION FORMULATIONS WITH A MULTIDISCIPLINARY FEASIBLE APPROACH FOR AERO-STRUCTURAL AIRCRAFT DESIGN Fabian Volle , Eric Schaar, Yann David
	16:45-17:05	MULTI-FIDELITY OPTIMISATION STRATEGY BASED ON HYBRID METHODS Agustí Porta Ko, Sergio González Horcas, Jordi Pons-Prats, Gabriel Bugeda, Jordi Ventura	16:45-17:05	TOWARDS AERO-STRUCTURAL OPTIMIZATION USING THE NEW CFD SOFTWARE BY ONERA, DLR, AIRBUS (CODA) Markus Widhalm , Fabian Volle, Adam Büchner, Franziska Kasielke
17:15	Bus transportation from the LUT university campus to the hotels			
18:30	Bus transportation from the conference hotels to the conference banquet			
19:00–22:30	Conference Banquet in Bistro & Bar Kokka , Address Borupinraitti 4			
	Bus transportation to the conference hotels after the dinner			

THURSDAY, SEPTEMBER 18

8:00 Bus transportation from the conference hotels to the LUT university campus

PARALLEL SESSIONS

MINI-SYMPOSIUM ON PARTIAL DIFFERENTIAL EQUATIONS-GOVERNED MODELS AND OPTIMIZATION IN ENGINEERING APPLICATIONS
proposed by Rabia Altunay, Jarkko Suuronen

Session chair: Rabia Altunay

THEMATIC SESSION ON BAYESIAN OPTIMIZATION

Session chair: Lassi Roininen

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

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

11:00-12:10

Auditorium 1

11:05-11:25	HOW TO SURVIVE SEVERE DISRUPTIONS IN ENERGY SYSTEMS Ghazaleh Saboori , Soumen Atta, Giovanni Misitano, Babooshka Shavazipour
11:25-11:45	MULTI-STAGE MULTI-SCENARIO MULTI-OBJECTIVE OPTIMIZATION FOR ADAPTIVE ROBUST ENERGY TRANSITION UNDER EEPUNCERTAINTY Babooshka Shavazipour
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

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> Chair: Dietrich Knörzer
13:00-13:15	CLOSING OF THE CONFERENCE Speakers: Conference Chairs
13:15-14:00	LUNCH
13:30	NOTE: Earlier departure. Bus transportation to Helsinki airport.