



OPAL-RT
TECHNOLOGIES

PRELIMINARY AGENDA



OPAL-RT's 15th International
Conference on Real-Time Simulation

November 13-16, 2023

Lisbon, Portugal

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Preliminary Agenda



Exact times of sessions may differ in final agenda.

DAY 1 - MONDAY, NOVEMBER 13th

	MILAO I	MILAO II
13:00 - 15:00	— Tutorial : HIL Simulation basics - Setting up and automating a hardware in-the-loop experiment by Yahia Bouzid, OPAL-RT University Manager	Tutorial : Power-HIL in theory and practice - stabilizing the closed loop by Sebastian Hubschneider, OPAL-RT R&D Engineer
15:00 - 15:30	— BREAK	
15:30 - 17:30	— Tutorial : Bridging domains: Transient Electromagnetic / Phasor co-simulation - Simulating power systems without compromise by Steffen Vogel, OPAL-RT Software specialist	Tutorial : Power Electronics HIL with eHS Gen5 - the fast and the furious 2 by Marija Stevic, OPAL-RT R&D Engineer
18:00 - 20:00	— WELCOME RECEPTION (MEZZANINE)	

DAY 2 - TUESDAY, NOVEMBER 14th

	EUROPA
8:00 - 9:00	— BREAKFAST
9:00 - 9:15	— WELCOME TO RT23 by Pierre-Francois Allaire, Executive General Manager, OPAL-RT Technologies
9:15 - 9:45	— KEYNOTE #1 by Jean Bélanger, CTO, OPAL-RT Technologies
9:45 - 10:15	— KEYNOTE #2 Energy transition and power system simulation – a European view by Bernd Klöckl, Head of the Institute for Electrical Power Engineering and Sustainable Energy Systems, TU Wien
10:15 - 10:45	— KEYNOTE #3 How Power Conversion, a GE Vernova business, utilizes HIL simulators to validate controllers of medium voltage drives MV7 and MM7 for pumped storage hydro power plants, railway SFC and STATCOM applications by Dominik Hofmeyer, Manager of the "Drive Control, Engineering & Technology, GE Vernova's Power Conversion Business
10:45 - 11:15	— KEYNOTE #4 Using Drives Converter as powerful MV Amplifier - a story about using HIL by Marcin Szlosek, R&D Director, ABB
11:15 - 11:30	— MORNING BREAK & EXHIBIT - (LONDRES)

Preliminary Agenda



DAY 2 - TUESDAY, NOVEMBER 14th

	EUROPA	ROMA I
	ADVANCES IN REAL-TIME SIMULATION TECHNOLOGY AND TECHNIQUES	PROTECTION AND CONTROL FOR POWER SYSTEMS
11:30 - 12:00	— OPAL-RT Simulators – A Key Component in Power Technology Research at KIT by Felix Wald Karlsruhe Institute of Technology, Germany	Real-time simulation to test hybrid state estimation and WAMPAC functionalities by Eric Glende Otto-von-Guericke-University Magdeburg, Germany
12:00 - 12:30	— Empowering energy sector coupling: CHIL-based laboratory setup for testing real-time grid by Felix Wald TU Dortmund University, Germany	Distance and differential protections HIL Testing by Joaquin Pulido SCLE SFE, France
12:30 - 13:30	— Real-time simulation of power electronics with the exponential integrator by Jared Paull UBC Okanagan, Canada	Communication Performance Testing for Special Protection Scheme (SpPS) by Jirapa Kamsamrong OFFIS Institute, Germany
13:00 - 14:00	— LUNCH & EXHIBIT - (LONDRES)	
14:00 - 14:30	— Efficient p-q Theory-based Load Modelling for Real-Time Simulations by Karthik Rajashekariah Karlsruhe Institute of Technology, Germany	Deployment of Distribution Linear State Estimator (DLSE) using PMU data by Ali Alvi Exelon, United States
14:30 - 15:00	— Reinforcing hands-on learning: the role of real-time tools in educating students Ron Brandl Fraunhofer IEE, Germany	Integration Tests of an Adaptive Protection System in a Hardware in the Loop Testbed by Immanuel Hacker IAEW at RWTH Aachen, Germany
15:00 - 15:30	— Coming Soon	— Coming Soon
15:30 - 16:00	— AFTERNOON BREAK & EXHIBIT - (LONDRES)	
	CYBERSECURITY	ENERGY CONVERSION
16:00 - 16:30	— (16:00 - 17:00) Automated Cyber-Physical Staging Environment for Validating Smart Grid Software Ecosystems by Catalin Gavriluta & Denis Vettoretti Austrian Institute of Technology, Austria	HIL validation of isolated DC-DC converter in a MVDC network by Titouan Abiad Supergrid Institute, France
16:30 - 17:00	—	Aircraft actuation system development with Power Electronics FPGA-based motor model by Pawel Jastrzebski Woodward, Poland
17:00 - 17:30	— Coming Soon	Challenges in Real-Time Simulation of Smart Transformers by Marius Langwasser Kiel University, Germany
18:00 - 20:30	— TUK TUK TOURS	

Preliminary Agenda

DAY 3 - WEDNESDAY, NOVEMBER 15th

EUROPA

- 8:00 - 9:00 — **BREAKFAST**
- 9:00 - 9:30 — **KEYNOTE #5**
by Nuno de Souza e Silva, Managing Director, R & D Nester
- 9:30 - 10:00 — **KEYNOTE #6**
Net-Zero-CO2 by 2050 is NOT Enough (!)
by Timo Roesch
Director, Business Development and Marketing, OPAL-RT TECHNOLOGIES
- 10:00 - 11:00 — **EDUCATION PANEL**
- 11:00 - 11:30 — **MORNING BREAK & EXHIBIT - (LONDRES)**

EUROPA

ROMA I

GRID OPERATION, STABILITY AND DIGITAL TWINS

POWER HARDWARE-IN-THE-LOOP

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| <p>11:30 - 12:00 — Commissioning of Electrical Substation-Grid Test Bed with IEDs and Cyber-Grid Guard
by Emilio Piesciorovsky
Oak Ridge National Laboratory, United States</p> | <p>Insights on laboratory-scale DC system validation with PHIL and RCP
by Marc René Lotz
Ostfalia University, Germany</p> |
| <p>12:00 - 12:30 — Incremental prototyping approach of control solutions for Local Energy Communities
by Daniele Carta
Forschungszentrum Jülich, IEK-10, Germany</p> | <p>Smart-Integrated-Grid: PHIL island grid comprising electric and hydrogen systems
by Edgar Diego Gomez Anccas
Helmut-Schmidt-University, Germany</p> |
| <p>12:30 - 13:00 — Development of μController for Shore to Ship Power: Battery Energy Storage Controller CHIL
by Mike Mekkanen
University of Vaasa, Finland</p> | <p>RCP of Fuel Cell Powered Multi-Strand Propulsion Systems For Electric Aircraft
by Lukas Baum
Helmut Schmidt University/University of the Bundeswehr Hamburg, Germany</p> |
| <p>13:00 - 14:00 — LUNCH & EXHIBIT - (LONDRES)</p> | |
| <p>14:00 - 14:30 — NREL ARIES Project
by Rob Hovsopian
NREL National Renewable Energy Lab, United States</p> | <p>Development of a PHIL Test System with a Pre-trained AI-based Load and Charging Management
by Andreas Stadler
Helmut Schmidt University/University of the Bundeswehr Hamburg, Germany</p> |
| <p>14:30 - 15:00 — Coordination of Congestion Management between Transmission and Distribution Networks
by Hui Cai
TU Ilmenau, Germany</p> | <p>Interaction between Grid-Forming converter and synchronous machine - PHIL validation
by Frédéric Colas
L2EP/Arts et Métiers, France</p> |

Preliminary Agenda

		EUROPA	ROMA I
		INVERTER BASED RENEWABLES INTEGRATION	POWER HARDWARE-IN-THE-LOOP
15:00 - 15:30	—	X-in-the-Loop Test Environment for Standardized - Development of Photovoltaic Inverters by Derk Gonschor Bonn-Rhein-Sieg University of Applied Sciences, Germany	HIL Assisted Design for PHIL Real-Time Electrical Machine Power Emulation by Nicolas Eugenio Lima Basquera Roma Tre University, Italy
15:30 - 16:00	—	AFTERNOON BREAK & EXHIBIT - (LONDRES)	
		FACTS & HVDC	
16:00 - 16:30	—	Transcending Concept to Realization: Accelerated Development for Grid-Forming Control Inno by Axel Seibel Fraunhofer IEE, Germany	CHIL setup of an offshore wind farm connected via HVDC by Christopher Klein IAEW RWTH Aachen, Germany
		MICROGRIDS	
16:30 - 17:00	—	Emulating EV Charging Performance using Real-Time Simulation by Keith Davidson National Renewable Energy Laboratory, United States	Resiliency Enhancement of Microgrids through real-time coordination of fault detection by Hani Muhsen German Jordanian University, Jordan
17:00 - 17:30	—	Optimization of the Parameters of Under-Frequency Load Shedding Schemes and Grid forming by Francisco Gonzalez-Longatt DigEnSys_lab - Loughborough University - University of South Eastern Norway, UK	Real-Time Simulation of an Islanded Microgrid System for Renewable Hydrogen Production by Janito Ramos LAFABE/COPPE/UFRJ, Brazil
17:00 - 17:30	—	Framework For Assessment of Geographically Distributed Simulations of Electrical Systems by Gabriel Antero LAFABE/COPPE/UFRJ, Brazil	Coming Soon
19:00 - 23:00	—	GALA DINNER & AWARDS - (MONSANTOS OPEN AIR)	

DAY 4 - THURSDAY, NOVEMBER 16th

9:00 - 13:00 — **INDUSTRIAL VISIT R&D NESTER AND EDP**