



OPAL-RT
TECHNOLOGIES

AGENDA

RT22

ENERGIZING
TOMORROW

OPAL-RT's 14th International
Conference on Real-Time Simulation

October 18 – 21, 2022

Le Westin, Montréal, Québec

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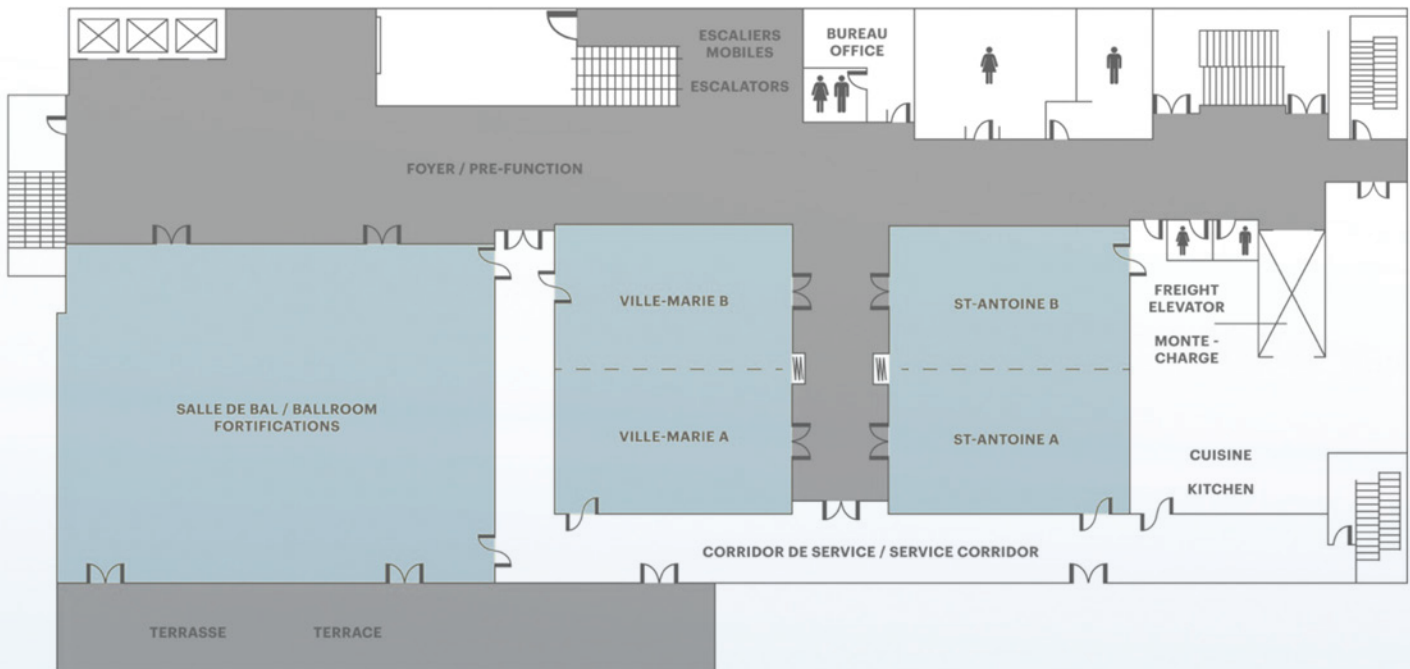


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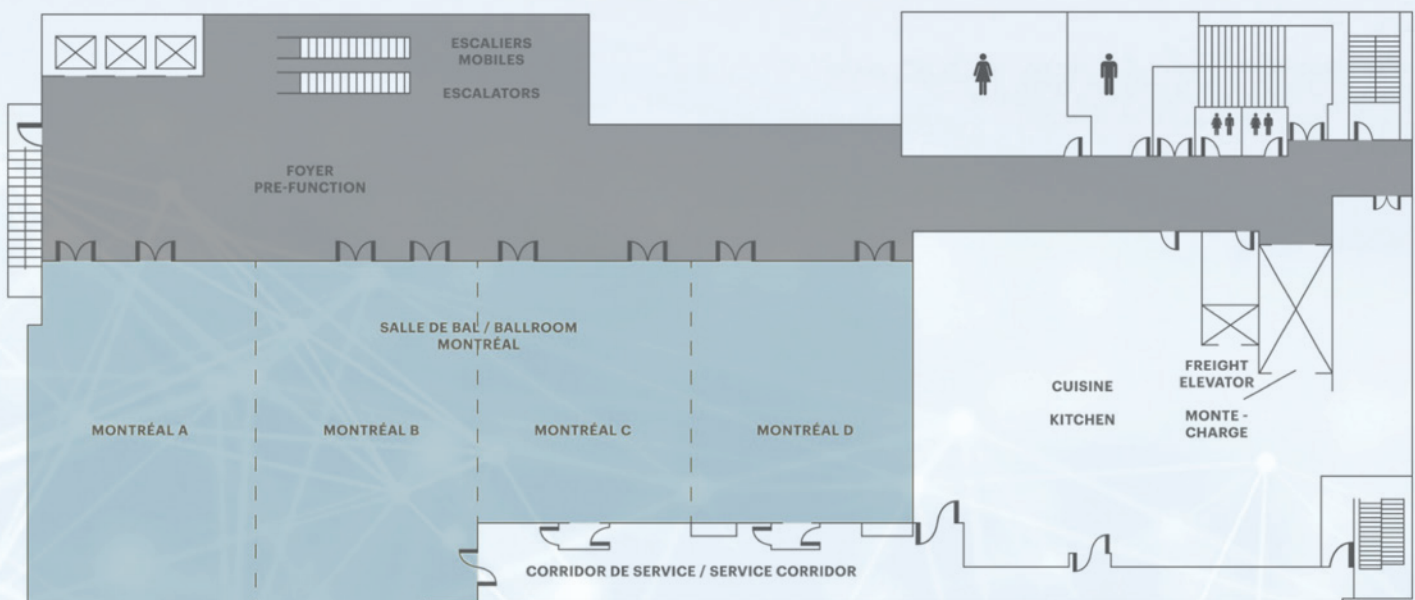


Floor plans

9TH FLOOR (PRESENTATIONS)



11TH FLOOR (EXHIBIT, MEALS AND BREAKS)



TUESDAY, OCTOBER 18th

18:00 - 21:00 — WELCOME COCKTAIL / REGISTRATION (8TH FLOOR - GRANDE PLACE)

Sponsored by 

**Business casual attire proposed*

WEDNESDAY, OCTOBER 19th

8:00 - 9:00 — BREAKFAST / REGISTRATION (11TH FLOOR - MONTREAL BALLROOM)

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9:00 - 9:30 — WELCOME TO RT22

9:30 - 10:45 — KEYNOTE - ENERGIZING TOMORROW'S POWER SYSTEM

10:45 - 11:00 — MORNING BREAK & EXHIBIT (11TH FLOOR - MONTREAL BALLROOM)

RT22 PRESENTATION ROOMS			
	FORTIFICATION	ST-ANTOINE	VILLE-MARIE
	PROTECTION AND CONTROL FOR POWER SYSTEMS	E-MOBILITY AND TRANSPORTATION	INVERTER BASED RENEWABLES INTEGRATION
11:00 - 11:30	— Hardware-in-the-loop Simulation for Operational Test of Substation Protection and Control by Wagner Seizo Hokama, CPFL ENERGIA, Brazil	— Investigation of Ripple Currents in DC Ship Systems with Power Hardware-in-the-Loop by Christoph Klie, Hamburg University of Technology, Germany	— Real Time Modelling and Validation of the Power Conversion System for Battery Energy Storage by Dmitry Rimorov, Hydro-Québec, Canada
11:30 - 12:00	— Novel Strategy for Fault e-Diagnosis of WECS Using Wavelet based on RT-LAB & Arduino by Abdeldjebar Hazzab, École de Technologie Supérieure de Montréal, Canada	— The Real Time Application: Digitalisation of the Iron Bird by Debiante Achour, Certia, France	— Development of a Digital Twin for Renewable Energy Inverter: Simulation Approach by Charles-Olivier Jacques, Nergica, Canada
12:00 - 13:00	— LUNCH & EXHIBIT (11TH FLOOR - MONTREAL BALLROOM) Sponsored by 		

Agenda

RT22 PRESENTATION ROOMS			
	FORTIFICATION	ST-ANTOINE	VILLE-MARIE
	PROTECTION AND CONTROL FOR POWER SYSTEMS	GRID OPERATION, STABILITY AND DIGITAL TWINS	INVERTER BASED RENEWABLES INTEGRATION
13:00 - 13:30	— Substation Automated Training Simulator (SATS) by Genesis Alvarez, Dominion Energy, USA	Testing Curative Measures in Extra-High and High-Voltage Grids by Martin Wolter, OvGU Magdeburg, Germany	WAMS based Real-time Voltage Stability Monitoring for various Load Models and a Wind Farm by Raju Chintakindi, Visvesvaraya National Institute of Technology - Nagpur, India
13:30 - 14:00	— Real Time Performance Analysis of Transformer Differential Protection based on IEC 61850-9 by Adriano Morais, Federal University of Santa Maria, Brazil	Innovation through DRTS Integration: Why an Integrated Real Time Digital Twin Environment is Essential for Solving Future Grid Challenges by Rob Hovsapian, NREL - National Renewable Energy Laboratory, USA	Advanced Simulation Platform for Interconnected Photovoltaic Inverters: Preliminary Result by Humberto Jimenez, National Institute of Electricity and Clean Energies, Mexico
14:00 - 14:30	— Fault Current Limiting Control for Three-Phase Dual-Active Bridge (DAB) by Raphael Mencher, Power Generation and Storage Systems (PGS) at RWTH Aachen, Germany	Smart Resilient Power System using Vehicle-to-Grid (V2G) by Chul-Hwan Kim and Ho-Young Kim, Sungkyunkwan University, South Korea	Real-Time Control of Power Take-Off using PDC3 Control by Ronald Matthews, Sandia National Laboratories, United States
MICROGRIDS			
14:30 - 15:00	— Developing Scalable, High-Fidelity Microgrid Models for Validating Resilient Controls by Aditya Ashok, Pacific Northwest National Laboratory, United States	Grid Impact Analysis of Electric Vehicles Integration - A Real-Time Simulation Approach by Bright Tetteh, University of Cape Town, South Africa	Distributed Generation by Renewable Energy Conversion Systems through Power Electronics by Nadia M Salgado-Herrera, Instituto de Energias Renovables - UNAM, Mexico
15:00 - 15:30	AFTERNOON BREAK & EXHIBIT (11TH FLOOR - MONTREAL BALLROOM)		
			ENERGY CONVERSION
15:30 - 16:00	— µController Development Active Power Managements and Testing via CSIL-HIL Vaasa Harbour by Mike Mekkanen, University of Vaasa, Finland	Testbed for Low Carbon Energy Systems under High Penetration of Power Electronics by Hector Chavez, USACH, Chile	Real-Time Simulation for Modular Multilevel Converter in Maschinenfabrik Reinhausen (MR) by Ibrahim Elsabrouty, Maschinenfabrik Rinhausen GmbH (MR), Germany
16:00 - 16:30	— Modeling and Real-Time Simulation of Jordan Campus Microgrid Using RT-LAB Platform by Khat Mounir, ENPO-MA, Algeria	Software-in-the-Loop for Online Dynamic Security Assessment of the Power System by David Panchi, OPERADOR NACIONAL DE ELECTRICIDAD -CENACE, Ecuador	Model Predictive Control and Neural Networks tools applied to Multilevel Converters by Rodrigo Cuzmar and Gabriel Droguett, PECLAB P. Universidad Catolica de Chile, Chile
16:30 - 17:00	— Digital-Twin of a Real Microgrid Project in Brazil by Thais Blasi, Federal University of Paraná, Brazil	Co-Simulation of Power and Energy Systems by Anudeep Medam, Idaho National Laboratory, United States	Variable Frequency Transformer real-time simulation performance evaluation with OPAL-RT by An Byeonghyeon, Mokpo National University, Republic of Korea
17:00 - 17:30	— Dynamic Control of An Islanded Microgrid with Multi-distributed Energy Sources Based on VSM by BINYU XIONG, Nanyang Technological University, Singapore	From Real-time Synthetic Grids to Modular Power System Digital Twins by Georgios Konstantinou, UNSW Sydney, Australia	

Agenda

THURSDAY, OCTOBER 20th

- 8:00 - 9:00** — **BREAKFAST / REGISTRATION (11TH FLOOR - MONTREAL BALLROOM)**
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- 9:00 - 9:10** — **WELCOME TO RT22**
- 9:10 - 10:20** — **KEYNOTE - ENERGIZING TOMORROW'S E-MOBILITY & TRANSPORTATION**
- 10:20 - 11:00** — **MORNING BREAK & EXHIBIT (11TH FLOOR - MONTREAL BALLROOM)**

RT22 PRESENTATION ROOMS			
FORTIFICATION		ST-ANTOINE	VILLE-MARIE
E-MOBILITY AND TRANSPORTATION		CYBERSECURITY	INVERTER BASED RENEWABLES INTEGRATION
11:00 - 11:30	— Power Hardware-in-the-Loop: Improved Capabilities for Testing Inverters by Uday Deshpande, D&V Electronics USA, United States	Defending Power Grids from Real-World Cyber-Attacks Using Network Digital Twins by Lloyd Wihl, Keysight, United States	Implementation of PMSG based Wind Turbine System using OPAL-RT Digital Controller by Mendi Balaji, NIT ROURKELA, India
11:30 - 12:00	— How to Build a Complex HIL System for Aerospace with NI VeriStand and PXIe by Cyril Gambini, Neosoft Technologies, Canada and Bruno Cesar Yenikomochian, OPAL-RT, Brazil	MG Simulation CHIL via FPGA IEC 61850 GOOSE Subject to Cyber-Attacks by Mike Mekkanen, University of Vaasa, Finland	Time- versus Frequency-Domain Analyses of EMT Interactions and System Stability by Jian Sun, Rensselaer Polytechnic Institute, United States
12:00 - 13:00	LUNCH & EXHIBIT (11TH FLOOR - MONTREAL BALLROOM) Sponsored by 		
13:00 - 13:30	— Closed Loop Reconfigurable HIL Verification and Test System for Multi-Pack BMS System by Subhasis Behera, Phoenix Motorcars, United States	Microgrid Active Power Diagnostic Against Cyber-Physical Attacks Using NARX Networks by Djaffar Ould Abdeslam and Bushra Cnaan, University of Haute Alsace, France	Real-Time Computing Cluster for Wind Farm Co-Simulation and HIL-Testing by Katharina Günther, Ruhr University Bochum, Germany
13:30 - 14:00	— Modelling Onboard Chargers with High CLLC PWM Resolution and Immunity to AC Grid Harmonics by Moctar Coulibaly, Valeo, France	POWER HARDWARE-IN-THE-LOOP PHIL for Accelerating the Energy Transition - An Overview of Research Applications at SGTL by Marcel Esser, TU Dortmund University, Germany	Marine Renewable Energy for the grid: R&D challenge from France Energies Marines expertise by Florian Dupriez-Robin, France Energies Marines, France
14:00 - 14:30	— Control Design for V2G-enable DC Charging Station with Controller-Hardware-in-Loop (C-HIL) by Asal Zabetian Hosseini, McGill University, Canada	Results of easyPHIL Project by Michael Maimer, Spitzenberger & Spies, Germany	Real-Time T&D Co-Simulation for Testing Grid Impact of High DER Participation by Hossein Hooshyar, New York Power Authority, United States

Agenda



RT22 PRESENTATION ROOMS			
FORTIFICATION		ST-ANTOINE	VILLE-MARIE
		POWER HARDWARE-IN-THE-LOOP	ADVANCES IN REAL TIME SIMULATION TECHNOLOGY
14:30 - 15:00	— NI Solutions	Power Hardware-in-the-Loop (PHIL) for Microgrid Studies: Lucas-Nuelle Training Systems and OPAL-RT Microgrid Testbench by Fabian Schwarz, Lucas-Nülle GmbH, Germany and by Dr. Syed Ahmed Raza Naqvi, OPAL-RT	Streamlined Real-Time Model Development for the OPAL-RT Platform Using SwAGSM by Ronald Matthews, Sandia National Laboratories, United States
15:00 - 15:20	— AFTERNOON BREAK & EXHIBIT (11TH FLOOR - MONTREAL BALLROOM)		
		FACTS & HVDC	
15:20 - 15:50	— Modeling Approaches for HIL Simulation of Hybrid SVC by Olivier Tremblay and Philippe Le-Huy, Hydro-Québec, Canada	Power Hardware-in-the-Loop: Considerations for the Setup of a Closed-Loop Test Bench by Sebastian Hubschneider, OPAL-RT Germany GmbH, Germany	Possibilities for the Use of Single Board Computers in Hardware-in-the-Loop Systems by Philipp Schmitz, Hochschule Bonn-Rhein-Sieg, Germany
15:50 - 16:20	— Experimental Assessment of Modular Multilevel Converters for HVDC Transmission Systems by Matias Diaz, USACH, Chile	[Continued] Power Hardware-in-the- Loop: Considerations for the setup of a closed-loop test bench by Sebastian Hubschneider, OPAL-RT Germany GmbH, Germany	Real-time Simulation: Opening Up Markets Through Human Capital Development by Adekunle Oyenusi, National Power Training Institute of Nigeria (NAPTIN), Nigeria
16:20 - 16:50	— MVDC Station Design and OPAL-RT Simulation Performance Evaluation by TaeHun Kim, Mokpo National University, Republic of Korea	Teaching and Research with OPAL-RT Microgrid PHIL Test bench and Bitlismen’s Power Labs by Ashot Minasyan, Bitlismen, Armenia, and Dr. Syed Ahmed Raza Naqvi, OPAL-RT	Remote-Controlled Hardware-in-the-Loop Laboratory for Engineering Education by Derk Gonschor, Bonn-Rhein-Sieg University of Applied Sciences, Germany
16:50 - 17:20	— Accelerating Development of New Multilevel Converters Using Advanced Real-Time Simulators by Liwei Wang, UBC Okanagan, Canada	Experimental Microgrid Testbed Based on OP4510 for the Universidad Distrital of Bogotá by Nelson Leonardo Diaz Aldana, Universidad Distrital Francisco José de Caldas, Colombia	
17:20 - 17:30	— RT22 - CLOSING DAY & PRIZES (@ LE WESTIN - ROOM FORTIFICATION)		
18:30	— OPAL-RT’S 25TH ANNIVERSARY CELEBRATION! (@ LE PARQUET - 1000 PLACE JEAN-PAUL-RIOPELLE)		
FRIDAY, OCTOBER 21 th			
11:00 - 14:00	— OPAL-RT HEADQUARTERS VISIT (@ OPAL-RT - 1751, RUE RICHARDSON OFFICE #1060)		

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OPAL-RT's 25th Anniversary Celebration!

@ LE PARQUET
1000 PLACE JEAN-PAUL-RIOPELLE
THURSDAY, OCTOBER 20TH | 6:30PM

The year 2022 marks OPAL-RT's 25th anniversary, and we see no better way to celebrate than with our clients, partners, and friends at RT22. At our closing party, meet new and familiar faces from all departments at OPAL-RT at what is sure to be a night to remember!

*Semi-formal cocktail attire proposed

OPAL-RT HEADQUARTERS VISIT

@ OPAL-RT - 1751 Rue Richardson, office 1060
FRIDAY, OCTOBER 21ST | 11AM - 2PM



Take advantage of this exclusive opportunity to visit OPAL-RT's new headquarters, meet our experts, view live demos, and network!