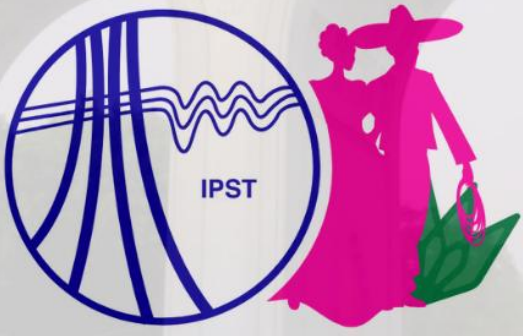
CONFERENCE PROGRAM



IPST 2025

International Conference on Power Systems Transients

Guadalajara, México.

8 to 12 June, 2025

CONTENIDO

WELCOME MESSAGE

Dear colleagues

It is a pleasure to welcome you to the 2025 International Conference on Power Systems Transients (IPST 2025) in Guadalajara, Mexico from June 8th to 12th, 2025.

IPST was created with the goal of **promoting the study of power system transients** by offering a platform of scientific and technical excellence for its presentation. As an open conference, it is intended to be a forum for the scientific community involved in **all topics related to the study of transient phenomena** in electric energy systems. **IPST** is an outgrowth of the **European Conference on Power Systems Transients**. The first EPST conference, which was hosted by IST of the Technical University of Lisbon and organized by Professor **Maria Teresa Correia de Barros**, was held in Lisbon, Portugal during the summer of 1993. That first conference included 39 contributions from 17 countries. The conference has been growing with an international community and a Steering Committee.

The **IPST 2025** edition is co-organized in Guadalajara, México by the **University of Guadalajara** and **Cinvestav-Guadalajara**. The **University of Guadalajara** is an institution that has proven fundamental to the formation of high-quality human resources and the production of scientific and technological knowledge that support development in the state of Jalisco, while the **Center for Research and Advanced Studies** (Cinvestav) is a leading public institution in scientific research and postgraduate education in México

The technical committee, chaired by Filipe Miguel Faria da Silva of Aalborg University and Mustafa Kizilcay from University of Siegen, has accepted 125 papers from all over the world that will be presented at the IPST 2025 in Guadalajara. The papers cover all topics related to transient phenomena in electric power systems such as switching and fault transients, harmonics & power quality, solution methods and algorithms, power electronics and lightning surges.

We would like to extend our thanks to the sponsors of the IPST 2025: OPAL RT Technologies, SEL, ORACLE, INTEL, EMTP, PSCAD, RTDS Technologies, SIEMENS ENERGY, as well as the University of Guadalajara, CIVESTAV Guadalajara, Technological University of Jalisco (UTJ) and the Guadalajara Convention and Visitors Bureau. Special thanks to all committees' members for their outstanding collaborations and contributions, to the authors for submitting their research and to all those who helped us achieve this conference.

On behalf of the IPST 2025 Local Organizing Committee

Dr. Eduardo Salvador Bañuelos Cabral
University of Guadalajara
IPST 2025 Co-Chair

Dr. José Luis Alejandro Naredo Villagrán
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- Yoshihiro Baba
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- Zacharias G. Datsios
- Zhibo Wang
- Zhiquan Song
- Zia Emin

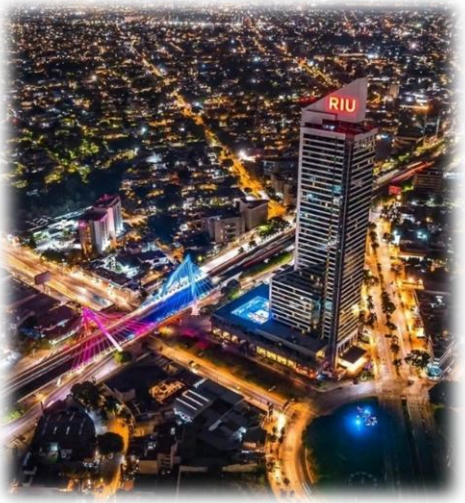
DESTINATION

Guadalajara is the capital and largest city of the Mexican state of **Jalisco** with over 5 million inhabitants, was founded on February 14, 1542 near the San Juan de Dios River, named after the Spanish city of the same name by Nuño de Guzmán. It's located in the central region in the Western-Pacific area of Mexico. Guadalajara is the cultural center of Mexico, considered by most to be the home of mariachi music and Tequila. Guadalajara hosts to a number of large-scale cultural events such as the Guadalajara International Film Festival, Guadalajara International Book Fair (FIL) and globally renowned cultural events which draw international crowds. The metropolitan area of Guadalajara consists of four urban districts – **Guadalajara, Tlaquepaque, Tonalá, and Zapopan**. Guadalajara will be one of the host cities for the 2026 World Cup

CONFERENCE VENUE

The RIU Plaza Guadalajara Hotel

The Riu Plaza Guadalajara Hotel with its ideal location has more than 500 rooms and 16 conference rooms with the capacity to hold more than 1,300 people for meetings and events of all types. This hotel located in the city of Guadalajara is just over a mile from the Gran Plaza Fashion Mall and less than two miles from the Expo Guadalajara Convention Center.



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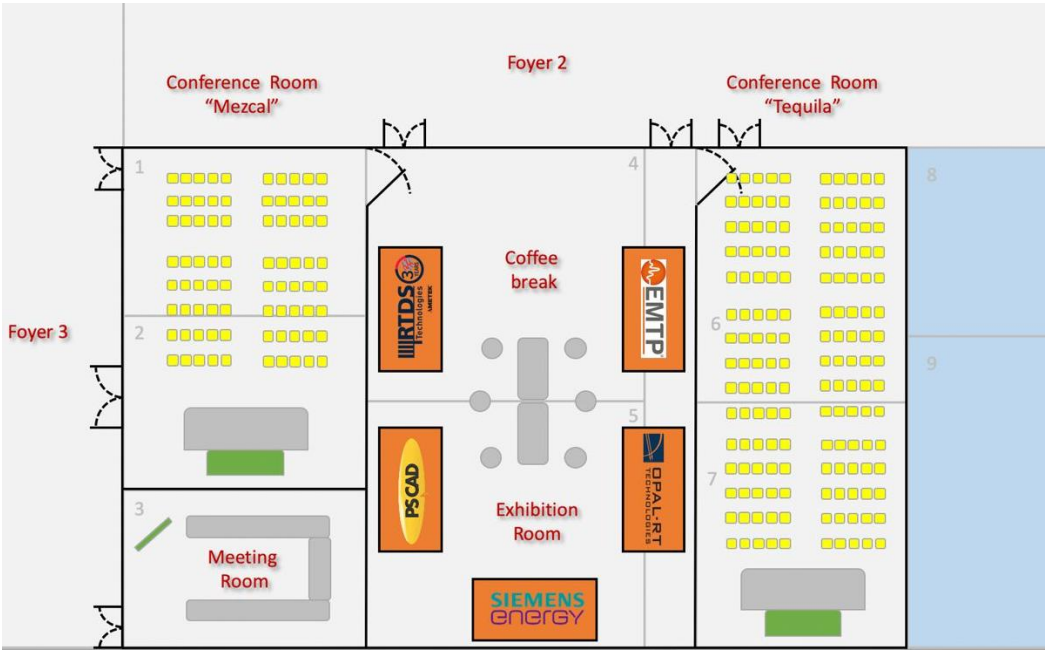

The registration / Welcome desk will be located at Foyer 2 front desk and will operate during the following hours:

Sunday, 8th:	17:00 – 21:00
Monday, 9th:	07:00 – 19:00
Tuesday, 10th:	07:00 – 19:00
Wednesday, 11th:	07:00 – 19:00
Thursday, 12th:	07:00 – 19:00

CULTURAL VISITS

Sightseeing Tour at Guadalajara-Tlaquepaque

Some of the most important historical buildings are located at Guadalajara downtown: Theaters, Museums, Churches and monuments.

Date & time: June 8th

16:30 – 18:30

https://www.tapatiotour.com.mx/EN/

CULTURAL VISITS

Tlaquepaque is best known for its craftsmanship and longtime tradition of mariachi performances. Local arts and crafts fill the showrooms and stores in this town, where travelers will find carved wood furniture, colorful ceramics, and hand-stitched clothing, among other fine goods.

SOCIAL EVENTS

Gala Dinner at Tequila, Jalisco

The name **Tequila** comes from the **Nahuatl word Tecuilan or Tequillan**, meaning a place of work or a place of cutting.

Date & time: June 9th

18:00 – 21:00

https://mundocuervo.com/

The town of Tequila is the birthplace of the artisanal drink that bears its name and dates back centuries.

PROGRAM

The program is subjected to changes. For the updated agenda follow the conference web site.

IPST 2025 Schedule.

Time	Sunday *June 8, 2025*	Monday *June 9, 2025*	Tuesday *June 10, 2025*	Wednesday *June 11, 2025*	Thursday *June 12, 2025*
8:00 - 8:30		Authors and Chair Meeting	Authors and Chair Meeting	Authors and Chair Meeting	Authors and Chair Meeting
8:30 - 10:30		Opening Ceremony Invited Lecture: Ricardo Octavio Mota Palomino	3rd Technical Session (12 presentations in two rooms)	5th Technical Session (12 presentations in two rooms)	9th Technical Session (12 presentations in two rooms)
10:30 - 11:00		Exhibition & Coffee Break	Exhibition & Coffee Break	Exhibition & Coffee Break	Exhibition & Coffee Break
11:00 - 13:20		1st Technical Session (14 presentations in two rooms)	4th Technical Session (14 presentations in two rooms)	6th Technical Session (14 presentations in two rooms)	10th Technical Session (14 presentations in two rooms)
13:30 - 15:00		Lunch at RIU Hotel	Lunch at RIU Hotel	Lunch at RIU Hotel	Closing Ceremony
14:30 - 15:00		Authors and Chair Meeting	Sightseeing Tour and Gala Dinner at Tequila Town Guadalajara to Tequila 15:00-16:00 Tour in *José Cuervo* distillery 16:00-17:30 Welcome *Hacienda El Centenario* 17:30-18:00 Gala Dinner 18:00-21:00 Guadalajara 10:00	Authors and Chair Meeting	Lunch at RIU Hotel 15:00-16:30
15:00 - 17:00		2nd Technical Session (8 presentations in two rooms) 15:00 - 16:20		7th Technical Session (12 presentations in two rooms)	
17:00 - 19:00	Registration and welcome cocktail	Sightseeing Tour at Guadalajara Tapatio Tour Double-decker tour buses 16:30-18:30 aprox.		8th Technical Session (12 presentations in two rooms)	Post-conference Workshop (Offered by Sponsors) INTEL ORACLE OPAL-RT SEL 16:30-19:30
19:00 - 21:00		Dinner at RIU Hotel		Dinner at RIU Hotel	Dinner at RIU Hotel 19:30

*Authors/Chair Meeting Schedule**

Session	Day	Time	Room	Session title
1	Mon 9th	08:00 - 08:30	Tequila	TLC: Transmission lines and cables
			Mezcal	SP: System Protection
2		14:30 - 15:00	Tequila	PQ: Harmonics & Power Quality
			Mezcal	SP / RTS: System protection /Real time simulations
3, 4	Tue 10th	08:00 -08:30	Tequila	T: Transformers, Reactors and Machines
			Mezcal	SMA: Solution Methods and Algorithms
			Tequila	LIC: Lightning Surges and Insulation Coordination
			Mezcal	SP: System Protection
5, 6	Wed 11th	08:00 - 08:30	Tequila	PE: Power Electronics, FACTS, HVDC
			Mezcal	RES: Renewable Energy Sources
			Tequila	LIC: Lightning Surges and Insulation Coordination
			Mezcal	AI: Artificial Intelligence and Optimisation
7, 8		14:30 - 15:00	Tequila	T: Transformers, Reactors and Machines
			Mezcal	AI / SMA: Artificial intelligence and optimisation / Solution methods and algorithms
			Tequila	SD: System Dynamics
			Mezcal	SMA / TLC: Solution methods and algorithms / Transmission lines and cables
9, 10	Thr 12th	08:00 - 08:30	Tequila	PE: Power Electronics, FACTS, HVDC
			Mezcal	SD: System Dynamics
			Tequila	ST / TOV: Switching & Fault Transients and Temporary overvoltages
			Mezcal	SMA: Solution Methods and Algorithms

**All authors must attend the authors/chair meeting indicated in this schedule corresponding to their session number.* Authors/chair meetings will be held in the conference rooms.

IPST 2025 Paper Sessions

Day	Session	Time	Room	Session title	Session Chair	Paper ID
Mon 9th	1	11:00 - 13:20	Tequila	Transmission lines and cables	Rafael Alipio	104, 86, 45, 105, 5, 74, 51
			Mezcal	System Protection	Karcius Dantas	93, 62, 42, 85, 103, 123, 20
	2	15:00 - 16:20	Tequila	Harmonics & Power Quality	Jorge Luis García Sánchez	7, 68, 44, 34
			Mezcal	System protection /Real time simulations	José Martí	119, 49, 32, 37
Tue 10th	3	8:30 - 10:30	Tequila	Transformers, Reactors and Machines	Marjan Popov	81, 57, 96, 38, 11, 48
			Mezcal	Solution Methods and Algorithms	José Luis Naredo	83, 33, 39, 60, 108, 61
	4	11:00 - 13:20	Tequila	Lightning Surges and Insulation Coordination	Maria Teresa Correia de Barros	21, 101, 19, 22, 111, 6, 13
			Mezcal	System Protection	Armando Guzmán	125, 79, 112, 113, 65, 25, 109
Wed 11th	5	8:30 - 10:30	Tequila	Power Electronics, FACTS, HVDC	Reza Iravani	98, 82, 2, 30, 36, 31
			Mezcal	Renewable Energy Sources	Fernando Moreira	23, 4, 14, 110, 28, 88
	6	11:00 - 13:20	Tequila	Lightning Surges and Insulation Coordination	Alberto de Conti	3, 95, 102, 52, 91, 67, 87
			Mezcal	Artificial Intelligence and Optimisation	Pablo Gomez	43, 72, 40, 64, 58, 66, 27
	7	15:00 - 17:00	Tequila	Transformers, Reactors and Machines	Hans Kristian Høidalen	76, 89, 77, 16, 63, 73
			Mezcal	Artificial intelligence and optimisation / Solution methods and algorithms	Antonio Siqueira Lima	8, 75, 121, 69, 122, 124
	8	17:00 - 19:00	Tequila	System Dynamics	José Luis Naredo	59, 50, 100, 41, 117, 80
			Mezcal	Solution methods and algorithms / Transmission lines and cables	Theofilos Papadopoulos	97, 53, 18, 84, 29, 46
Thr 12th	9	8:30 - 10:30	Tequila	Power Electronics, FACTS, HVDC	Ilhan Kocar	12, 114, 1, 54, 106, 24
			Mezcal	System Dynamics	Grigoris Papagiannis	99, 17, 26, 92, 70, 118
	10	11:00 - 13:20	Tequila	Switching & Fault Transients and Temporary Overvoltages	Maria Cristina Tavares	35, 47, 90, 120, 55, 107, 56
			Mezcal	Solution Methods and Algorithms	Jean Mahseredjian	78, 15, 94, 115, 10, 116, 9

Monday 9th June

Time	Monday 9th June, 2025			
8:00 8:30	**Authors and Chair Meeting**			
8:30 10:30	**Opening ceremony**			
	Invited Lecture			
10:30	**Exhibition & Coffee Break**			
	Technical sessions **Session 1**			
	Transmission Lines and Cables		System Protection	
	Room: Tequila Chair: Rafael Alipio		Room: Mezcal Chair: Karcius Dantas	
11:00	**Theofilos A Papadopoulos**	Transient Electromagnetic Interference on Buried Pipelines Caused by Double Circuit Overhead Power Lines	**Sarasij Das**	Adaptive Memory-Polarization for Improved Performance of Mho Relay in Presence of Grid-Following PV
11:20	**José Pissolato Filho**	Influence of Approximate Internal Impedance Formula on Half-Wavelength Transmission Lines	**Cristian Camilo Árias Rodríguez**	Undesired Events of HV Capacitor Banks by Negative Sequence Current Unbalance Protection Under External Faults
11:40	**Hans Kristian Høidalen**	On proximity correction of pipe-type cable parameters with method of moment approach	**Glaufe Oliveira**	Assessment of Differential Protection Applied to LCC-HVDC Converter Transformers
12:00	**Amauri Martins**	Electromagnetic Transient Modeling and Surge Analysis of Overhead Power Lines Above Two-layer Earth	**Athula Rajapakse**	Settings-Free Strategy for Correlation-Based One-Ended Traveling Wave Fault Location Methods
12:20	**Alberto De Conti**	Accuracy Assessment of Analytical Expressions for the Ground Return Impedance of Underground Cables	**Kleber Melo Silva**	Enhanced Out-of-Step Protection Scheme for the Acre/Rondônia Region of the Brazilian Power Grid
12:40	**Marjan Popov**	Effect of Cable Sheath Termination on Transient Overvoltages due to High-Frequency Cable-Transformer Resonance	**Milad Beikbabei**	Pilot Detection and Location of Broken Conductor Faults for Tapped Transmission Lines
13:00	**Jeewantha De Silva**	Improving Numerical Efficiency of Frequency Dependent Transmission Line Models for EMT simulations	**Bozidar Filipovic-Grcic**	Verification of low-frequency signal injection method for earth-fault detection
13:30 15:00	**Lunch at RIU Hotel**			
14:30 15:00	**Authors and Chair Meeting**			

Monday 9th June

	Session 2			
	Harmonics & Power Quality		System Protection / Real Time Simulators	
	Room:	Tequila	Room:	Mezcal
	Chair:	Jorge Luis García Sánchez	Chair:	José Martí
15:00	**Alejandro Carretero-Hernandez**	Voltage Harmonic Effect of a Large-Scale Solar PV Plant on High-Voltage Transmission Network	**Paulo Pinheiro**	Analysis of Line Protection Elements for Various IBR Controllers and System Conditions
15:20	**Kerim Ozer**	A Passive Harmonic Filter Design for BESS Plant	**Ajinkya Sinkar**	Real-Time System Strength Estimation using PMU Data for Modern Grids with High IBR Penetration
15:40	**João Ricardo**	Evaluation of the Effect of Harmonic and Interharmonic Distortions on Inverse Time Protective Relays	**Ali Banitalebi Dehkordi**	A Flux-Defined PMSM Model Based on FEA Results for Real-Time EMT Simulation
16:00	**C.E. Román López**	Accurate Estimation of Harmonic and Non-harmonic Components Using the NLT and Vector Fitting	**Alireza Masoom**	FPGA-based Simulation of Grid-tied Converters using Frequency-dependent Network Equivalent
16:20	**Sessions end**			
16:30 - 18:30	**Sightseeing Tour**			
19:00 21:00	**Dinner at RIU Hotel**			

Tuesday 10th June

Time	Tuesday 10th June, 2025			
8:00 - 8:30	**Authors and Chair Meeting**			
	Technical sessions **Session 3**			
	Transformers, Reactors and Machines		Solution Methods and Algorithms	
	Room: Tequila Chair: Marjan Popov		Room: Mezcal Chair: Jose Luis Naredo	
08:30	**Nelson Clodoaldo Jesus**	Measurements and Simulations in the Analysis of Transformer Failures during Vacuum Circuit Breaker Switching and Surge Protector Applications	**Pablo Gómez**	Cosimulation Approach for Transient Analysis and Transformer Design of Isolated DC-DC Converters
08:50	**Jorge Andrés Zamora**	Characterization of an Oil-Insulated Capacitive Voltage Divider for Transient Overvoltage Measurement	**Martin Gerardo Vega Grijalva**	Iterative Matrix Fitting Approach of Frequency Dependent Matrices based on Vector Fitting
09:10	**Seyedarmin Mirnikjoo**	Detailed Electromagnetic Transient Model of Switched Reluctance Motor Drive System	**Felipe Uribe**	Subconductor Partition Algorithm for the Fast Computation of Cable Impedance
09:30	**Felipe Luis Probst**	Black-Box Modeling Approach for Evaluating Internal Resonances in High-Voltage Windings	**José R. Martí**	SFA-EMT Hybrid Simulation of Power Systems: Application to HVDC Systems
09:50	**Ali Banitalebi Dehkordi**	Modeling of Cross-Magnetization Effects in Saturated Synchronous Machines for Electro-Magnetic Transient Programs	**Carlos Alberto López de Alba**	Higher-Order Newton-Cotes and Gauss-Quadrature Integration Rules to Solve Carson and Pollaczek Integrals
10:10	**Ajinkya Sinkar**	A New Concept for Calibration of Capacitive Voltage Transformers using PMU Measurements	**Andrea T. J. Martí**	The fdLoad Model for Accurate Frequency Dynamics in the SFA-EMT Simulator
10:30	**Exhibitions & Coffee Break**			

Tuesday 10th June

	Session 4			
	Lightning Surges and Insulation Coordination		System Protection	
	Room: Tequila Chair: Maria Teresa Correia de Barros		Room: Mezcal Chair: Armando Guzmán	
11:00	**Franjo Vukovic**	Lightning Flash Observations on a Wind Turbine in Croatia: Insights from Current Measurements, High-Speed Camera, LLS and Lightning Imager Data	**María Cristina Dias Tavares**	The Use of Half-Wavelength Transmission Line to Integrate Large-Scale Wind Power Plant
11:20	**Silvia Sincic**	On Site Operation of a Real Time Measurement System for Monitoring Transient Currents Through Line Surge Arresters	**Murillo Cobe Vargas**	Fuse Sizing Using Penetration Level Indicators in IBR-dominated Distribution Feeders
11:40	**Bozidar Filipovic-Grcic**	Electromagnetic transients and failed upward leaders observed during lightning activity in an onshore wind farm	**Willem Leterme**	Use of Fast Circuit Breakers to Mitigate Overvoltages in VSC HVDC Point-to-Point Schemes
12:00	**Brandon Steven Ardila**	Lightning flashes at electric power system towers identified as Recurrent Lightning Spots observed by ground and space-based systems	**Willy Arnaud Nzale Mimbe**	A Realistic Breaker Model for Simulation of Prestrike/Restrike in Circuit Breakers
12:20	**Walter Luiz Manzi de Azevedo**	Novel Compacting Grounding System for Mitigating Ground Potential Rise and Backflashovers	**Karcius Dantas**	Phasor-Based Secondary Arc Extinction Detection Method for Shunt Compensated Transmission Lines
12:40	**Alberto De Conti**	Calculation of Lightning-Induced Voltages on a Large-Scale Distribution Network Using the JMarti Model	**Kleber Melo Silva**	A New Negative-Sequence Cross-Differential Algorithm for Double-Circuit Line Protection
13:00	**Anderson Ricardo Justo De Araujo**	Impact of Concrete-Encased Grounding Systems on Lightning Overvoltages in Transmission Lines	**Victor H. González-Sánchez**	Application of a Hybrid Fault Location Technique Combining Impedance and Traveling Waves to Double-Circuit Transmission Line
13:20	**Sessions end**			
13:30-15:00	**Lunch at RIU Hotel**			
15:00-22:00	**Sightseeing Tour and Gala Dinner**			

Wednesday 11th June

Time	Wednesday 11th June, 2025			
8:00-8:30	**Authors and Chair Meeting**			
	Technical sessions **Session 5** Power Electronics, FACTS, HVDC		Renewable Energy Sources	
	Room:	Tequila	Room:	Mezcal
	Chair:	Reza Iravani	Chair:	Fernando Moreira
08:30	**Dilsha Kuranage**	Comparative Analysis of Losses in Converters for Battery Energy Storage Using EMT Simulations	**Denis Vinicius Coury**	Improving Fault Location in Wind Farm Interconnection Lines through Fault Resistance Estimation
08:50	**Pablo Gómez**	Accurate Estimation of Passive Component Defect and Degradation in DC-DC Power Converters from Transient Terminal Responses	**Denis Vinicius Coury**	Challenges and Recommendations for Enhancing Protection of Onshore Wind Farm Collector Systems
09:10	**Ajinkya Sinkar**	A Computationally Efficient Approach for Power Semiconductor Loss Estimation of Modular Multilevel Converters in EMT Simulations	**Anton Stepanov**	Type-3 Wind Turbine Generator Model with Generic High-Level Control for Electromagnetic Transient Simulations
09:30	**Diego Langarica-Cordoba**	Parameter Estimation Algorithm for a PEM Electrolyzer Equivalent Circuit Model Under Current Ripple Conditions	**Dominik Miloš**	Detailed EMTP wind turbine model for simulation transient phenomena during lightning strikes
09:50	**Eros Avdiaj**	Passivity, dynamic performance and current limitation of MMC-based CC-GFM with harmonic filtering	**Chul-Hwan Kim**	Application of Fault Current Bypassing Method Using Double-Thyristor Module on Full-Bridge MMC based AC/DC Hybrid Distribution System
10:10	**Diego Langarica-Cordoba**	Proportional-Integral Passivity-based Control of a Fuel Cell System with an Energy Storage System	**Ricardo Álvarez-Salas**	Open-Circuit Switch Fault Diagnosis of an NPC Converter in a DFIG-Based WECS
10:30	**Exhibitions & Coffee Break**			

Wednesday 11th June

	Session 6			
	Lightning Surges and Insulation Coordination		Artificial Intelligence and Optimisation	
	Room:	Tequila	Room:	Mezcal
	Chair:	Alberto de Conti	Chair:	Pablo Gomez
11:00	**Akifumi Yamanaka**	Lightning Overvoltages Incoming to a Substation: Analysis with Emphasis on the LEMP Impact	**Grigoris K. Papagiannis**	A Data-Driven Method For The Development of System Frequency Response Models For Frequency Stability Analysis
11:20	**Selma Grebovic**	Investigation of Lightning Effects on Solar Power Plants Connected to Transmission Networks	**Marc-Antoine Coulombe**	Simulation of a closed-loop dc-dc converter using a physics-informed neural network-based model
11:40	**Anderson Ricardo Justo de Araujo**	Realistic Soil Modeling in Transient Analysis: Effects of Frequency Dependence, Water Content, Porosity and Stratification on Lightning Overvoltages	**Karcius Dantas**	Data Regression Strategy to Model Transmission Line Faults on Vegetation
12:00	**Jaimis Sajid Leon Colqui**	Comprehensive Approach to Improve Backflashover Rate in Overhead Transmission Lines Using Top and Multiple Underbuilt Wires	**Elinor Ginzburg-Ganz**	Leveraging Bitcoin Mining Machines in Demand-Response Mechanisms to Mitigate Ramping-Induced Transients
12:20	**Ruyguara Meyberg**	Integrating Dynamic Soil Ionization Models in EMTP for Time-Domain Simulation of Grounding Resistance	**José Chávez Muro**	Ferroresonance Identification by Pattern Recognition of its Characteristic Wavelets
12:40	**Kazuo Yamamoto**	Verification of measures to mitigate lightning current flowing into metal sheaths of power cables	**Anil Kulkarni**	Online Estimation of Linearized IBR models using Ambient Noise and External Excitation
13:00				
13:30 - 15:00	**Lunch at RIU Hotel**			
14:30 - 15:00	**Authors and Chair Meeting**			

Wednesday 11th June

	Session 7			
	Transformers, Reactors and Machines		Artificial Intelligence and Optimisation / Solution Methods and Algorithms	
	Room: Tequila Chair: Hans Kristian Høidalen		Room: Mezcal Chair: Antonio Siqueira Lima	
15:00	**Ali Dehkordi**	Enhancements to Terminal Duality-Based Models for Three-Phase Multi-Limb Multi-Winding Transformers	**Jorge Luis Montalvo Santiago**	TKEO-DESA-Based Decision Tree for Power Quality Events Detection and Classification
15:20	**Rodrigo Sousa Ferreira**	Frequency-Dependent Motor Model for Studying Interruption of Small Inductive Currents	**Maurício Pavani**	A Feature Selection and Generalization Analysis for High Impedance Fault Classification Based on Support Vector Machine
15:40	**Mohammad Shafieipour**	T-Equivalent Zero-Sequence Impedances of Transformers with a Tertiary Delta Winding Obtained from Test Data	**Boris Bruned**	Co-simulation and Compensation Method for Parallel Simulation of Electromagnetic Transients
16:00	**Amir Ali Kaabi Nejadian**	SPICE Implementation of Multiconductor Transmission Line Model of Transformer Winding for Very Fast Transient Analysis	**Luis A. Garcia-Reyes**	A New Methodology for Ultra-Fast and Accurate Statistical EMT Analysis in Electric Power-Systems
16:20	**Julio Hernández**	Sensibility Analysis of the Virtual Synchronous Generator Using a Small-Signal Model	**Mohammad Jafari Matehkolaei**	Compact scheme challenges in EMT-Type simulations
16:40	**Marjan Popov**	Wind Farm Transformer Protection Against Lightning Transients Using Air Core Reactor and Resistor	**Enrique Melgoza-Vázquez**	Simulation of electromagnetic transients with a family of implicit multi-step oscillation-free formulas

Wednesday 11th June

	Session 8			
	System Dynamics		Solution Methods and Algorithms / Transmission Lines and Cables	
	Room:	Tequila	Room:	Mezcal
	Chair:	José Luis Naredo	Chair:	Theofilos Papadopoulos
17:00	**José R. Martí**	Integration of the EMT-H Water Conduit Model with the Turbine Control System for Power System Dynamics	**Chamindu Devin Aluthge**	Accelerating Electromagnetic Transient Simulations Using Graphical Processing Units
17:20	**Ilhan Kocar**	Sustained Oscillations of Grid-forming IBRs under Unbalanced Perturbation: Modal Analysis and EMT Studies	**Jesus Enrique Guevara Asorza**	Earth return admittance and frequency-dependent soil parameters effect on transient behavior of the earth continuity conductor
17:40	**Anil Kulkarni**	Angular Stability of Grid Forming Converters Subjected to Large Disturbances	**Bozidar Filipovic-Grcic**	Superimposed Impulse Voltage Test on 525 kV HVDC Underground Cable
18:00	**Francisco Javier Cifuentes García**	Z-tool: Frequency-domain characterization of EMT models for small-signal stability analysis	**Rafael Alipio**	Revisiting the Influence of Dispersive Characteristics of Soil Electrical Parameters on Transient Behavior of Underground Cables: Impacts on Wave Propagation and Practical Case Studies
18:20	**Yukai Wang**	A Power System Inertia Estimation Method Using Local Phasor Measurements from a Single Machine Considering Load Voltage Dependency	**Fernando Augusto Moreira**	Contributions to Cable Constants Programs for Accurate and Efficient Electromagnetic Transient Modeling in Submarine Cables
18:40	**Narges Zarean Shahraki**	Online Inertia Estimation of Inverter-Based Resources using Bus Frequency Measurements	**Jesús Morales**	Frequency and Transient Responses of A 275 kV Pressure Oil-Filled Cable: Model Validation
19:00 21:00	**Dinner at RIU Hotel**			

Thursday 12th June

Time	Thursday 12th June, 2025			
8:00 - 8:30	**Authors and Chair Meeting**			
	Technical sessions **Session 9**			
	Power Electronics, FACTS, HVDC		System Dynamics	
	Room:	Tequila	Room:	Mezcal
	Chair:	Ilhan Kocar	Chair:	Grigoris Papagiannis
08:30	**Alireza Massom**	Fast Investigation of Control Interaction Risk in PV Parks Using Eigenvalue Analysis in Modelica	**Dilsha Kuranage**	Revisiting Dynamic Phasors and Their Efficacy in Simulating Electric Circuits
08:50	**Hui Ding**	Enhancement of Low-Voltage-Ride-Through Capability for DFIG Wind Energy Systems	**Bozidar Filipovic-Grcic**	Investigation of Resonance between HVDC-MMC Link and AC Network
09:10	**Ahmad Allabadi**	Acceleration strategies for EMT Simulation of HVDC systems	**Zhiqiang Liu**	An EMT Based Dynamic Frequency Scanning Tool for Stability Analysis of Inverter Based Systems
09:30	**Jhair Stivel Acosta Sarmiento**	Inhibition of Inter-inverter Harmonic Propagation as a Means to Mitigate Cascaded Commutation Failures in Multi-Infeed LCC-HVdc Systems	**Athula Rajapakse**	Theoretical Analysis of the Impact of IBRs on Impedance Trajectories during Power Swings
09:50	**Lucas Frizera Encarnacao**	Decentralized Inverter Control with Selective Harmonic Damping Connected to a Multi-Bus Grid	**Mahesh Rathnayake**	Dynamic Equivalencing of Power Systems Using Bus Impedance Matrix
10:10	**Carmen Cardozo**	Design of Bipolar MT HVDC Grids: Contingency Analysis and Preliminary Dynamic Studies	**Zia Emin**	Impact of Replacing Synchronous Generation with Inverter-Based Generation on Voltage Fluctuations
10:30	**Exhibitions & Coffee Break**			

Thursday 12th June

	Session 10			
	Switching, Fault Transients and Temporaty Overvoltages		Solution Methods and Algorithms	
	Room:	Tequila	Room:	Mezcal
	Chair:	Maria Cristina Tavares	Chair:	Jean Mahseredjian
11:00	**E.S. Bañuelos-Cabral**	Passive Modeling of Transmission Line Impedance with Real Poles using Non-negative Least Squares	**Jean Mahseredjian**	A Julia-Based Simulation Platform for Power System Transients
11:20	**Yanfei Liu**	Surge Arrester Energy Stress at A VSC-HVDC Link Due to DC Fault Transients	**Antonio Carlos Siqueira Lima**	Realization of Rational Models for Tower-Footing Grounding Systems
11:40	**Rodrigo Sousa Ferreira**	A proposal of Hybrid Resistive-Inductive Grounding to limit both Transient Overvoltages and Ground-Fault Currents in High-Voltage Electrical System	**Sebastián Loaiza Elejalde**	Time-Delay Estimation Through All-Pass Functions for ULM Line and Cable Models
12:00	**Rafael de Oliveira Fernandes**	Transient Overvoltage in Isolated Ground Systems: Simulation-Based Analysis and Real Case Event of Intermittent Faults	**Xiaopeng Fu**	Reduced-order and Simultaneous Solution of Power and Control System Equations in EMT Simulations
12:20	**Johannes Kolb**	Resonant overvoltage challenges during premagnetization energization of power transformers	**Fernando Augusto Moreira**	Improving EMT Simulations Using Frequency-Shifted Rational Approximations
12:40	**Jesús Morales**	Evaluation of the Interference Effects of HVDC fault on a buried pipeline	**Xiaopeng Fu**	A State-Space Approach for Accelerated Simulation of Modular Multilevel Converters
13:00	**Johannes Kolb**	Comparison of transformer models for switching operations in long step-out cable systems	**Alexandre Akira Kida**	High-Accuracy EMT Simulations through Pole–Residue Compensation
13:20	**Sessions end**			
13:30 - 15:00	**Lunch at RIU Hotel**			
15:00 - 16:30	**Closing Ceremony**			
16:30 - 19:30	**Post-Conference Worshop**			
19:00 21:00	**Dinner at RIU Hotel**			

Papers Approved

Paper ID	Title
1	Acceleration strategies for EMT Simulation of HVDC systems
2	A Computationally Efficient Approach for Power Semiconductor Loss Estimation of Modular Multilevel Converters in EMT Simulations
3	Lightning Overvoltages Incoming to a Substation: Analysis with Emphasis on the LEMP Impact
4	Challenges and Recommendations for Enhancing Protection of Onshore Wind Farm Collector Systems
5	Accuracy Assessment of Analytical Expressions for the Ground Return Impedance of Underground Cables
6	Calculation of Lightning-Induced Voltages on a Large-Scale Distribution Network Using the JMarti Model
7	Voltage Harmonic Effect of a Large-Scale Solar PV Plant on High-Voltage Transmission Network
8	TKEO-DESA-Based Decision Tree for Power Quality Events Detection and Classification
9	High-Accuracy EMT Simulations through Pole–Residue Compensation
10	Improving EMT Simulations Using Frequency-Shifted Rational Approximations
11	Modeling of Cross-Magnetization Effects in Saturated Synchronous Machines for Electro-Magnetic Transient Programs
12	Fast Investigation of Control Interaction Risk in PV Parks Using Eigenvalue Analysis in Modelica
13	Impact of Concrete-Encased Grounding Systems on Lightning Overvoltages in Transmission Lines
14	Type-3 Wind Turbine Generator Model with Generic High-Level Control for Electromagnetic Transient Simulations
15	Realization of Rational Models for Tower-Footing Grounding Systems
16	SPICE Implementation of Multiconductor Transmission Line Model of Transformer Winding for Very Fast Transient Analysis
17	Investigation of Resonance between HVDC-MMC Link and AC Network
18	Superimposed Impulse Voltage Test on 525 kV HVDC Underground Cable
19	Electromagnetic transients and failed upward leaders observed during lightning activity in an onshore wind farm
20	Verification of low-frequency signal injection method for earth-fault detection
21	Lightning Flash Observations on a Wind Turbine in Croatia: Insights from Current Measurements, High-Speed Camera, LLS and Lightning Imager Data
22	Lightning flashes at electric power system towers identified as Recurrent Lightning Spots observed by ground and space-based systems
23	Improving Fault Location in Wind Farm Interconnection Lines through Fault Resistance Estimation
24	Design of Bipolar MT HVDC Grids: Contingency Analysis and Preliminary Dynamic Studies
25	A New Negative-Sequence Cross-Differential Algorithm for Double-Circuit Line Protection
26	An EMT Based Dynamic Frequency Scanning Tool for Stability Analysis of Inverter Based Systems
27	Mathematical Modelling and Data-Driven Protection Algorithm for Fault Current Calculation in Bipolar Medium Voltage MTDC Networks

57	Characterization of an Oil-Insulated Capacitive Voltage Divider for Transient Overvoltage Measurement
58	Ferroresonance Identification by Pattern Recognition of its Characteristic Wavelets
59	Integration of the EMT-H Water Conduit Model with the Turbine Control System for Power System Dynamics
60	SFA-EMT Hybrid Simulation of Power Systems: Application to HVDC Systems
61	The fdLoad Model for Accurate Frequency Dynamics in the SFA-EMT Simulator
62	Undesired Events of HV Capacitor Banks by Negative Sequence Current Unbalance Protection Under External Faults
63	Sensibility Analysis of the Virtual Synchronous Generator Using a Small-Signal Model
64	Leveraging Bitcoin Mining Machines in Demand-Response Mechanisms to Mitigate Ramping-Induced Transients
65	Phasor-Based Secondary Arc Extinction Detection Method for Shunt Compensated Transmission Lines
66	Online Estimation of Linearized IBR models using Ambient Noise and External Excitation
67	Verification of measures to mitigate lightning current flowing into metal sheaths of power cables
68	A Passive Harmonic Filter Design for BESS Plant
69	A New Methodology for Ultra-Fast and Accurate Statistical EMT Analysis in Electric Power-Systems
70	Dynamic Equivalencing of Power Systems Using Bus Impedance Matrix
71	Traveling Wave based Wide Area Backup Protection for HVAC network interfacing MMC based HVDC system
72	Simulation of a closed-loop dc-dc converter using a physics-informed neural network-based model
73	Wind Farm Transformer Protection Against Lightning Transients Using Air Core Reactor and Resistor
74	Effect of Cable Sheath Termination on Transient Overvoltages due to High-Frequency Cable-Transformer Resonance
75	A Feature Selection and Generalization Analysis for High Impedance Fault Classification Based on Support Vector Machine
76	Enhancements to Terminal Duality-Based Models for Three-Phase Multi-Limb Multi-Winding Transformers
77	T-Equivalent Zero-Sequence Impedances of Transformers with a Tertiary Delta Winding Obtained from Test Data
78	A Julia-Based Simulation Platform for Power System Transients
79	Fuse Sizing Using Penetration Level Indicators in IBR-dominated Distribution Feeders
80	Online Inertia Estimation of Inverter-Based Resources using Bus Frequency Measurements
81	Measurements and Simulations in the Analysis of Transformer Failures during Vacuum Circuit Breaker Switching and Surge Protector Applications
82	Accurate Estimation of Passive Component Defect and Degradation in DC-DC Power Converters from Transient Terminal Responses
83	Cosimulation Approach for Transient Analysis and Transformer Design of Isolated DC-DC Converters
84	Revisiting the Influence of Dispersive Characteristics of Soil Electrical Parameters on Transient Behavior of Underground Cables: Impacts on Wave Propagation and Practical Case Studies

85	Settings-Free Strategy for Correlation-Based One-Ended Traveling Wave Fault Location Methods
86	Influence of Approximate Internal Impedance Formula on Half-Wavelength Transmission Lines
87	Effect of Continuous Cable between Adjacent Towers on Lightning Resilience of a 90kV Transmission Line with High Soil Resistivity
88	Open-Circuit Switch Fault Diagnosis of an NPC Converter in a DFIG-Based WECS
89	Frequency-Dependent Motor Model for Studying Interruption of Small Inductive Currents
90	A proposal of Hybrid Resistive-Inductive Grounding to limit both Transient Overvoltages and Ground-Fault Currents in High-Voltage Electrical System
91	Integrating Dynamic Soil Ionization Models in EMTP for Time-Domain Simulation of Grounding Resistance
92	Theoretical Analysis of the Impact of IBRs on Impedance Trajectories during Power Swings
93	Adaptive Memory-Polarization for Improved Performance of Mho Relay in Presence of Grid-Following PV
94	Time-Delay Estimation Through All-Pass Functions for ULM Line and Cable Models
95	Investigation of Lightning Effects on Solar Power Plants Connected to Transmission Networks
96	Detailed Electromagnetic Transient Model of Switched Reluctance Motor Drive System
97	Accelerating Electromagnetic Transient Simulations Using Graphical Processing Units
98	Comparative Analysis of Losses in Converters for Battery Energy Storage Using EMT Simulations
99	Revisiting Dynamic Phasors and Their Efficacy in Simulating Electric Circuits
100	Angular Stability of Grid Forming Converters Subjected to Large Disturbances
101	On Site Operation of a Real Time Measurement System for Monitoring Transient Currents Through Line Surge Arresters
102	Realistic Soil Modeling in Transient Analysis: Effects of Frequency Dependence, Water Content, Porosity and Stratification on Lightning Overvoltages
103	Enhanced Out-of-Step Protection Scheme for the Acre/Rondônia Region of the Brazilian Power Grid
104	Transient Electromagnetic Interference on Buried Pipelines Caused by Double Circuit Overhead Power Lines
105	Electromagnetic Transient Modeling and Surge Analysis of Overhead Power Lines Above Two-layer Earth
106	Decentralized Inverter Control with Selective Harmonic Damping Connected to a Multi-Bus Grid
107	Evaluation of the Interference Effects of HVDC fault on a buried pipeline
108	Higher-Order Newton-Cotes and Gauss-Quadrature Integration Rules to Solve Carson and Pollaczek Integrals
109	Application of a Hybrid Fault Location Technique Combining Impedance and Traveling Waves to Double-Circuit Transmission Line
110	Detailed EMTP wind turbine model for simulation transient phenomena during lightning strikes
111	Novel Compacting Grounding System for Mitigating Ground Potential Rise and Backflashovers
112	Use of Fast Circuit Breakers to Mitigate Overvoltages in VSC HVDC Point-to-Point Schemes
113	A Realistic Breaker Model for Simulation of Prestrike/Restrike in Circuit Breakers
114	Enhancement of Low-Voltage-Ride-Through Capability for DFIG Wind Energy Systems

115	Reduced-order and Simultaneous Solution of Power and Control System Equations in EMT Simulations
116	A State-Space Approach for Accelerated Simulation of Modular Multilevel Converters
117	A Power System Inertia Estimation Method Using Local Phasor Measurements from a Single Machine Considering Load Voltage Dependency
118	Impact of Replacing Synchronous Generation with Inverter-Based Generation on Voltage Fluctuations
119	Analysis of Line Protection Elements for Various IBR Controllers and System Conditions
120	Transient Overvoltage in Isolated Ground Systems: Simulation-Based Analysis and Real Case Event of Intermittent Faults
121	Co-simulation and Compensation Method for Parallel Simulation of Electromagnetic Transients
122	Simulation of electromagnetic transients with a family of implicit multi-step oscillation-free formulas
123	Pilot Detection and Location of Broken Conductor Faults for Tapped Transmission Lines
124	Compact scheme challenges in EMT-Type simulations
125	The Use of Half-Wavelength Transmission Line to Integrate Large-Scale Wind Power Plant

Intel Datacenter Power Delivery Network: design and validation

Víctor Jesús Zúñiga Márquez & Julio César Cinco Galica *Silicon Validation Engineering Manager & Power Integrity Engineer at Intel Guadalajara, Guadalajara, Mexico.*

Victor is currently a **Senior Engineering Manager at Intel Guadalajara**, leading a post-silicon validation team in charge of validating the CPU power and performance solution for Intel Data Center processors including Xeon and GPU MAX Series. **Victor has validated more than 50 designs covering power delivery** validation for integrated voltage regulators.

Julio César Cinco Galica is an electrical engineer working at Data Center and AI division for Intel. Julio is technical lead in the company with 16+ years of experience in Power Integrity Design of Server Xeon Products. **His expertise includes Platform, Packaging and Silicon power integrity of Xeon from Nehalem based servers to Xeon 6 Generation**.

Applied Spatial Data and AI on the industry

José de Jesús Vizcarra Plascencia *Principal Software Developer at Oracle MDC (Mexico Development Center), Guadalajara, Mexico.*

José de Jesús Vizcarra Plascencia is a **leading professional in the field of software development**, with a career comprising almost two decades in the technological industry. Graduated from the **University of Guadalajara in 2005**, he has consolidated his experience working in various consultancies and **global technology companies such as IBM, Tata, Amdocs and Oracle**.

Currently, he works as **Principal Software Developer at Oracle**, as part of the Oracle Spatial team, where he contributes to the development and innovation in geospatial technologies. His passion for technology has led him **to explore and apply practical use cases in emerging technologies**, driving the adoption of innovative solutions in different industry sectors.

With a focus on digital transformation and innovation, he actively participates in dissemination and collaboration spaces, **sharing his knowledge and expertise with the technological and academic community**.

Beyond Protection: Empowering Grid Innovation Through Real-Time Testing of IBRs, Digitalization and Cybersecurity

__Marcela Trindade__ OPAL-RT, General Manager for Latin America.

Marcela Trindade is an **Electronic Engineer graduated from the Federal University of Rio de Janeiro (UFRJ)**, with a master's degree in Oceanographic Instrumentation from COPPE/UFRJ. She has over 15 years of experience in R&D, instrumentation, and business development, having worked in **sectors such as energy, oil & gas, defense, and telecommunications**. Since 2018, she has been with OPAL-RT Technologies, a global leader in real-time simulation for power systems, where she currently serves as **General Manager for Latin America**.

Field Experience with Line Protection and Monitoring Using Traveling Waves

Armando Guzmán Casillas *Distinguished Engineer in R&D at Schweitzer Engineering Laboratories (SEL) Pullman, Washington, USA.*

Armando Guzmán received his **Bachelor of Science in Electrical Engineering with honors from the Autonomous University of Guadalajara (UAG)**, Mexico. He received a diploma in fiber-optics engineering from **Monterrey Institute of Technology and Higher Education (ITESM)**, Mexico, and his Master of Science and PhD in electrical engineering and **Master of Engineering in computer engineering from the University of Idaho, USA**.

He served as regional **supervisor of the Protection Department in the Western Transmission Region of the Federal Electricity Commission** (the electrical utility company of Mexico) in Guadalajara, Mexico for 13 years. He lectured at the **Autonomous University of Guadalajara and the University of Idaho in power system protection and power system stability**. Since 1993, he has been with **Schweitzer Engineering Laboratories, Inc. in Pullman, Washington, where he is a distinguished engineer**. He holds numerous patents in power system protection, fault locating, and monitoring.

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