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10TH EDITION

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1447 *Graph-Based Modelling of Optimization Problems for DC Direct Line Systems*

Andrew GARNER (1), Georg BRANDSTÄTTER (1), Clemens KORNER* (1), Gerhard JAMBRICH (1), Carolin MONSBERGER (1), Michael NIEDERKOFLER (2), Andreas SCHNEEMANN (2), Stefan STRÖMER (1), Yannick WIMMER (1)
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1450 *Impact Of Inverter-Based Resources Penetration On Reliability Of Islanding Relays Performance*

Mehdi BIGDAD*, Alexandre BACH, Trung Dung LE, Marc PETIT
CentraleSupélec / GeePs laboratory, France

1454 *Comparative Assessment of Distribution Network Architectures under Varying DER Penetration Levels*

Carlos CHAPARRO*, Vincent DEBUSSCHERE, Marie-Cécile ALVAREZ-HERAULT, Jérôme BUIRE
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1455 *Operational Risk Quantification for Preventive Control in Low Voltage Grids with Distributed Energy Resources*

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1459 *Integrated Planning of Electrical Distribution Grids and ICT Infrastructure*

Alexander PETERS*, Julian BIGALKE, Simon BRAUN, Luka ALHÄUSER CISNEIROS E FARIA, Andreas ULBIG
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Jacqueline TRICOT, Sofiane BOUIBEB, Paul PIKE*, Sébastien DELBOS
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1464 *Addressing Distribution Network Planning: A Case Study in Northern Italy*

Davide FRATELLI* (1), Aleksandar DIMOVSKI (1), Corrado Maria CAMINITI (1), Matteo SPILLER (1), Marco MERLO (1), Francesca CRAMAROSSA (2)
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Dominik J. STORCH* (1), Simon NIEDERLE (2), Christoph J. STEINHART (3), Michael KREISSL (3), Christian GUTZMANN (3), Maik GÜNTHER (4), Michael FINKEL (1), Rolf WITZMANN (2)
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Jacob LYNCH* (1), Martin CATON (2), Edward CORR (3), Andrew FORSTER (4), Peter LANG (5)
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Luciano MASOTTI* (1), Michele PASTORE (1), Francesco CAPPUCCIO (2), Ehsan POURHOSSEINI (2), Matteo BRESCHI (2), Tariq KHAN (2), Davide Stefano PICCAGLI (2)
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Joel SEPPÄLÄ, Marko JUNTUNEN*
Advian Oy, Finland

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Charlotte WEITZEL* (1), Prof. Dr. David ECHTERNACHT (2), Christoph CHRISTOFOLINI (3), Dr. Xiaohu TAO (3)
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Yerim LEE*, Dongjun HAN, Changhyun JEON, Hojun YANG, Dongjun WON
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Andrew URQUHART* (1), Iro PSARRA (2), Neville RICHARDS (2), Thomas WILSON (2), Murray THOMSON (1), David PENFOLD (3)
1: Loughborough University, United Kingdom; 2: CGI; 3: National Grid Electricity Distribution

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Cleberton REIZ*, Everton ALVES, Clara GOUVEIA, Micael SIMÕES, Jorge PEREIRA
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Farah NASR*, Nikita KIRSCH, Simon BRAUN, Andreas ULBIG
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Savvas PANAGI (1,2), Louiza STYLIANIDOU* (1,2), Phoivos THERAPONTOS (1), Chrysovalantis SPANIAS (1), Petros ARISTIDOU (2)
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Giuditta PISANO*, Adriano CASU, Fabrizio PILO
University of Cagliari, Italy

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Nina ŠTUMBERGER*, Rosa TERKOWSKI, Simon BRAUN, Andreas ULBIG
IAEW at RWTH Aachen University, Germany

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Adriano CASU*, Samuele SETZU, Barbara CANNAS, Giuditta PISANO, Fabio PISANO, Fabrizio PILO
University of Cagliari, Italy

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Sven SAUERBAUM* (1), Daniel HENN (2), Joachim GERLACH (3)
1: VIVAVIS AG, Germany; 2: University, Siegen; 3: Albstadt-Sigmaringen University

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Johannes HEID* (1,2), Jakob SEESE (2), Angela Maria GAMBA CARDENAS (1,2), Andrea SCHOEN (2), Nils BORNHORST (1), Martin BRAUN (1,2)
1: University of Kassel, Germany; 2: Fraunhofer IEE

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Christophe CHAUSSIN*, Alaa BARNAT, Gilles CORDIER, Axelle COUSINOU, Mehdi EL KANSOULI, Laurine HAMARD, Yue HONG, Iyadh KIOUA, Tsiry RASENDRASOA, Maxence ROBAUX, Côme STEPHANT, Raphaël TEBOUL
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Gertjan KOK* (1), Helko VAN DEN BROM (1), Ties VAN DER HEIJDEN (2), Bart PLEITER (3)
1: VSL B.V.; 2: TU Delft; 3: Alliander N.V.

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Department of Electric Power Engineering, Faculty of Electrical Engineering and Informatics Budapest University of Technology and Economics

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Simona RUGGERI*, Susanna MOCCI, Fabrizio PILO
University of Cagliari, Italy

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Simona RUGGERI*, Sara CARCANGIU, Gianni CELLI, Giuditta PISANO, Alessandro SECHI, Gian Giuseppe SOMA, Fabrizio PILO
University of Cagliari, Italy

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Simona RUGGERI* (1), Gianni CELLI (1), Giuditta PISANO (1), Gian Giuseppe SOMA (1), Fabrizio PILO (1), Daniela DI ROSA (2), Claudio PREGAGNOLI (2), Luca DE CAROLIS (3), Simone FERRERO (3), Fabio CAZZATO (3)
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Marius ENGEBRETHSEN*, Wojciech PORADOWSKI, Rune JACOBSEN, Einar Kirkhus NILSEN
REN, Norway

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Adam BABŚ*, Tomasz SAMOTYJAK
Institute of Power Engineering, Poland

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Sharon BOAMAH* (1), Priya MITTAL (1), Michel CARABALLO (2), Janise MCNAIR (1), Arturo BRETAS (3)
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Jacob Mathew KARUMAMKOTT*, Sinéad HANLEY, Cristina COLEMAN KENNY
ESB Networks, Republic of Ireland

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Erwan CHIBOUT*, Simon CAMAL, Georges KARINIOTAKIS
Mines Paris PSL, France

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Lucas LAFAYE* (1), Remy RIGO-MARIANI (1), Vincent DEBUSSCHERE (1), Marie-Cecile ALVAREZ HERAULT (1), Leonard BACAUD (2), Jeremy HIRSCH (2), Philippe CROS (2), Pierre GRANGER (2)
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1537 *Flexibility-Aware Residential Consumption Forecasting: A Hybrid Machine Learning and Foundation Model Approach for Nudge-Based Demand Response*

Erwan CHIBOUT*, Simon CAMAL, Georges KARINIOTAKIS
Mines Paris PSL, France

1543 *Power-Bounded Microgrids for Hosting Capacity Enhancement and Reinforcement Deferral in Distribution Networks*

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1546 *Data-Driven Risk and Fragility Assessment of Power Networks under Storm Events Using Causal Learning*

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1551 *Institutional Drift in Power System Planning*

Bálint HARTMANN*, Balázs Ágoston TURÓCZI, Péter SŐRÉS, István VOKONY
Budapest University of Technology and Economics, Hungary

1552 *Digital Twin for Day-ahead and Intraday Market Co-optimization Using Dynamic Line Rating*

Bálint HARTMANN*, Bence BERECZKI, Péter SŐRÉS, István VOKONY
Budapest University of Technology and Economics, Hungary

1553 *Unified LSTM-LLM Testbed for Real-Time Renewable Bidding and DSO Grid Feasibility Analysis*

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1563 *A P2P-based Transactive Energy Framework for Reconfigurable Power Distribution Networks with Mixed Architecture*

Monir ASHRAFI* (1), Seddik BACHA (1), Raphael CAIRE (1), Ali ABBASPOUR (2), Mahmud FOTUHI-FIRUZABAD (2), Sajjad FATTAHIAN-DEHKORDI (3), Corentin JACQUIER (1, 4)
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1581 *Load Transfer Automation Scheme for Distribution Network Reconfiguration and N-1 Contingency Compliance*

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Luca RAVANELLI*, Catia SANTINI, Stefano MELZI, Alessandro ZANI, Marco RIVA
ABB S.p.a., Italy

1146 *Controlled Switching: Enabling Future-Ready MV Networks. Key Lessons from High-Duty Field Applications*

Marco RIVA*, Luca RAVANELLI, Catia SANTINI, Stefano MELZI, Alessandro ZANI
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1148 *Construction And Operation Of A Stationary Battery Energy Storage System Utilizing Used EV Batteries*

Hiroyuki YOSHIDA*, Shinichi DOI, Toshiki ODA
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Janne LEMINEN* (1), Janne ALTONEN (1), Saku SIERMALA (1), Mika TAUSA (1), Hanna-Mari AALTO (2), Petteri KANGASLUOMA (2)
1: ABB Oy, Finland; 2: Elenia Verkko Oyj, Finland

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Miguel M BURGUETE*, Alberto SENDIN, Diego GARCIA, J Sebastian GOMEZ
Iberdrola España, Spain

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Senne STIENERS*, Lies DEBRUYNE, Jan CAPPELLE, Marta VANIN
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Tongxun WANG*, Wenxiao MA, Dandan FENG, Zhikai WANG, Zhaoliang LI, Yang WANG
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Andreas KAROGIANNIS* (1), Georgios KARAMANIS (1), Andreas AVRAS (2,3), Allan DOWNIE (2,3), Ibrahim FAIEK ABDULHADI (2,3), Oussama YOUSFI (4), Colin SCOBLE (4), Gustavo LEONARDO (4), Odilia BERTETTI (4), Elyse UWIMPAYE (4), Ewan PATON (4), Parul AGHI (4), Dimitrios LAGOS (1)
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1163 *Pilot-Phase Results of E.ON Hungária's Local Flexibility Market Platform*

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1167 *Distribution Fault Anticipation: Real-time Health Monitoring for Distribution Networks Using Waveform Analytics*

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1173 *Congestion Assessment in Distribution Grids Using Python and OpenDSS Conversion Pipeline*

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Rafael ARRANZ PADILLA* (1), Stefan-Mircea ILIESCU (2), Gheorghe-Ioan NICOLAESCU (2), Georgiana-Florentina BALANICA (2), Andrei-Sebastian POPA (2), Carles PUJOL SOLER (2)
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1180 *Phoenix: Intelligent Fault Detection for Resilient and Sustainable Distribution Networks*

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Jano SCHUBERT* (1,2), Edwin MORA (1), Mathias DUCKHEIM (1), Stefan NIESSEN (1,2)
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Thibaut THÉATE*, David VANGULICK
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1187 *Piri: Using Smart Meters And AI To Determine The LV Grid Connectivity*

Koen VANTHOURNOUT* (1), Bruno MACHARIS (2), Bert DE DECKER (1), Harm LEENDERS (2), Reinhilde D'HULST (1)
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Edoardo DACCÒ (1), Diego RAGGINI* (2), Fabio LEONARDI (2), Alessandro CIROCCO (2), Hasnain SALMAN (2), Gaetano IANNARELLI (2), Alberto VANNONI (3), Riccardo LAZZARI (3), Alessandro BOSISIO (4), Davide FALABRETTI (1)
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Carina LEHMAL*, Peter DOLLFUSS, Josef VOGEL, Zeljko BOBAR
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Takahisa HAYASHI* (1), Yuta NAKAMURA (1), Takao TOKUHARA (1), Toshiki ODA (1), Masahiro TANAKA (2), Takenori KOBAYASHI (2), Tomokazu MORITA (3)
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Minna KURONEN*, Susanna KARMELA
Helen Electricity Network Ltd, Finland

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Ramy ALI*, Ronan MEERE, Edmund O'CARROLL
Electricity Supply Board (ESB) Networks, Ireland

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1225 *Increase In Grid Utilisation & Capacity Through Impedance Reduction & Voltage Control Using Capacitive Transfer System Cable*

Ashkan Daria HAJILOO*, Karl DE JONG, Charles LUCAS-CLEMENTS, Jorge VIÑUELA PÉREZ
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1226 *Impact of A Vacuum Circuit-breaker on a MV Network: Modelling, Stresses Developped, and Description of the Non-linearity Involved*

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1235 *Applications of Machine-Learned State Estimation in Low-Voltage*

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1236 *Identifying And Mapping Shared Service Cables Using Artificial Intelligence For The Adoption Of Low Carbon Technology On The LV Network Of Ireland*

Amandeep SINGH*, Sadaf ZAHEER, Tara NÍ REACHTAGÁIN, Jack HERRING
ESB, Ireland

1241 *Dynamic Line Rating in Practice: Comparing Sensor-Based and Sensorless Methods on the Portuguese Grid*

Davide RAPOSO*, André NEVES, Ana Carolina MONTEIRO, Diana MACEDO, David CARVALHO, Mariana CÔRTE-REAL
E-REDES, Portugal

1242 *Sparse-PMU-Based Fault Location for Enhanced Operation of Distribution Power Networks*

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Emma JUSERIUS*, Anders JOHNSSON
Vattenfall Eldistribution AB, Sweden

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Jens HÖNEN*, Bernd SEIFERT, Florian GUTEKUNST
TransnetBW GmbH, Germany

1263 *Pilot for Model-Free Active Flexibility Management for Low-Voltage Grids According to German Regulation (§14a EnWG)*

Jano SCHUBERT* (1,2), Edwin MORA (1), Mathias DUCKHEIM (1), Erhard AUMANN (1), Philipp DOLCH (1), Stefan NIESSEN (1,2)
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1265 *Interoperable Digital Twin Data for Electrical Distribution Grids*

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1267 *Tripling Capacity Through Voltage Regulation On Long MV Feeder*

Eilert BJERKAN (1), Reidar TJELDHORN (1), Alexander KRISTENSEN* (1), Morten SJAAMO (2), Simon WEBER (3)
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1269 *QUEST – An Overarching System Control Solution: Live Trials & Digital Twin Validation*

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1270 *Overhead Line Fault Location on 11kV Networks Using a Common Disturbance Information Platform*

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1: National Grid Electricity Distribution; 2: Nortech Management Ltd

1271 *EleXsys dSTATCOMs in the E-REDES LV Network: Field Results and Insights for Advanced Volt/Var Control*

João BARBOSA* (1), Mark HIBBERT (2), Shane GOODWIN (2), Dr Edward BURSTINGHAUS (2), Pedro FERREIRA (3)
1: E-REDES, Portugal; 2: Stara Smart Grid; 3: EDP Inovação

1273 *Stochastic Multi-Asset Optimisation for Energy Strategic Planning: a Study Case at Brussels Airport*

Mattia D'ANDOLA* (1), Ludéric VAN CALCK (1), Nichita BOZGA (1), Julien VANDEBURIE (2), Thomas WEHENKEL (2), Martin JASIENSKI (3), Frederik VAN CLEEMPUT (3), Pierre-François CROUSSE (1)
1: Jetpack.ai, Belgium; 2: Resa, Belgium; 3: Brussels Airport Company (BAC), Belgium

1274 *Lessons Learned from an innovation department at a Belgian DSO*

Arnaud ROUFFIGNON*, Thomas BUISSERET, Thibaut THÉATE, David VANGULICK
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1275 *Potential For Reducing Redispatch Volumes Through The Use Of Dynamic Line Rating (DLR) And Curative Protection Measures (CRM)*

Paul KROEMER* (1), Antoni CHAJAN (1), Christoph SCHÖNHOFEN (1), Hauke JÜRGENSEN (2), Alexander KROGGEL (2), Matthias RUDOLPH (2)
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1276 *Active Fault Level Management - Development and Delivery*

Mark COLLINS* (2), Ralph EYRE-WALKER (1), Gary BURNS (2), Russell BRYANS (1), Colin MACKENZIE (2)
1: Scottish Power Energy Network, United Kingdom; 2: Smarter Grid Solutions, United Kingdom

1288 *Data Inconsistency In A Century-old Business With Delayed Digitalization: A Daily Algorithm For The Automatic Integration Of Data*

Francisco Javier ROS RAPOSO*, Jacinto JURADO TABARES, Julio Alejandro GONZÁLEZ MEJÍAS, Rubén CARMONA PARDO
Ingelectus, Spain

1290 *Customer Perception of Demand-Side Flexibility Tariffs in Switzerland*

Christoph IMBODEN* (1), Vincent RITS (2), Olga FROST (2)
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1291 *Pythia: Implementing Day-ahead Congestion Management In The German LV Grid*

Antonio HERNANDEZ ESPIN* (1), Alexandra KLINGER (2), David BRUMMUND (3), Philippe DE PAUW (1), Bert DE DECKER (1), Koen VANTHOURNOUT (1), Reinhilde D'HULST (1)
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1297 *A Future-Proof Control Architecture for System Operator-Owned Power Electronic Devices in Low Voltage Distribution Networks*

Mahmood JAMALI* (1), Grace DENYER (2), Ritika DAS (2), Scott ANGUS (1), David GREENWOOD (1), Matthew DEAKIN (1), Ali KAZEROONI (3), Andrew MOON (2)
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1300 *Edge-Hosted Virtual Protection Functions: Implementation and Validation of a Docker-Based vIED Using IEC 61850 SV and GOOSE*

Mihnea-Cristian MARIN* (1,2,3), Alexandru TANASESCU (1,3), Prof. Mattia BRAMBILLA (2), Assoc. Prof. Razvan CRACIUNESCU (1)
1: University POLITEHNICA of Bucharest, Romania; 2: Polytechnic University of Milan; 3: Eximprod Engineering, Bucharest, Romania

1301 *Algorithm Benchmark for Partial Discharge detection sensitivity in small-scale Medium Voltage Networks*

Sebastian PREUSS* (1,2), Thomas SCHMIDT (1), Guosong LIN (1)
1: Siemens AG, Germany; 2: Technical University of Darmstadt, Germany

1304 *Improving Grid Resiliency on Island-Based Microgrids for Reducing Blackouts in Unplanned Disconnection Events by Using Near-Real-Time Monitoring and Flexible Loads Management*

Matias Ariel KIPPKE SALOMÓN* (1,2), Kristin BOBECK (3), Arne BERLIN (3), Linda-Maria WADMAN (4), Pablo ARBOLEYA (1,2)
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1306 *AI for Predictive Maintenance and Customer Satisfaction Improvement*

Charles GEISMAR*, Caroline EL KHARRAT, Colin THIRARD, Jérémy BESSON
ENEDIS, France

1307 *DIGITECHNETZ – Challenges and Solutions in Implementing a Smart Grid Platform in Real Low-Voltage Distribution Grids*

Laura FIEDLER* (1), Marco WEISENSTEIN (2), Holger HÄNCHEN (3), Uwe SCHMIDT (4), Sven REICHARDT (5), Christian BEHNKEN (6), Peter SCHEGNER (1)
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1310 *Data-Driven Low-Voltage Grid Operations*

Christoph JÄTZ* (1), Sandrino BENECKE (1), Matthias HANSEN (2), André GEUEKE (2), Nicolas PITTROF (3), Sebastian KUMPFMÜLLER (3), Christian MEFFERT (4)
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1315 *From Hunting Zones to Scale-Up: EDP's Innovation Strategy for Faster Adoptive Solutions in Distribution Networks*

Sofia TAVARES*, Pedro FERREIRA
EDP Innovation, Portugal

1316 *Mitigating Faults in Medium-Voltage Distribution Systems Using Electronic Single-Phase Sectionalizers*

José Afonso ROMANCINI*, Lucas Fritzen VENTURINI, Mateus Netto GUIDI, Willian Alano BATISTA
Celesc Distribuição S.A., Brazil

1318 *Cross-Validation of Bayesian Linear State Estimation on a Real-World German Medium-Voltage Grid*

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1319 *E-REDES Automated Vegetation Management Audit for Distribution Networks Using High-Resolution Satellite Imagery and AI*

Ana LISBOA*, Ricardo BORGES, Artur FIGUEIREDO, Liliana TRINDADE
E-REDES, Portugal

1322 *From Pilot to Real-World Operation: Implementing Remote Curtailment of LV-Connected PV for Regional Constraint Management — Lessons from Enedis Field Trial*

Sasan ROSTAMBEIK TAFRESHI*, Saber LEHATEM, Thomas SCHALLER, Matthieu ANNE
Enedis, France

1324 *Sustaining a National Asset-Risk Methodology: Governance, Alignment and Expertise Transition in Common Methodology v3*

Joanne PEACOCK (1), Landel JOHNSTON* (2), Gavin HOWARTH (3), Linda HULL (4)
1: EA Technology, United Kingdom; 2: Scottish & Southern Electricity Networks, United Kingdom; 3: Northern Powergrid, United Kingdom; 4: EA Technology, United Kingdom

1325 *Data Analytics Implementation and Benefits in a Power Distribution Network –AI Fault Prediction Use Case*

Frantisek KELEMEN* (1), Anna KULMALA (1), Mika LIFFLANDER (1), Parul AGHI (2), Gustavo LEONARDO (2), Kaikong HO (2), Colin SCOBLE (2), Oussama YOUSFI (2)
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1326 *Beyond Smart Meters: The Next Chapter in Smart Grid Innovation*

Pedro CARREIRA* (1), Pedro DEL ROSAL (2), Pedro DANIEL (1), Catarina CALHAU (1), Pedro FERREIRA (3), Moisés LASO (4)
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1328 *Edge Computing for Real-Time Monitoring and Self-Healing in Digital Distribution Systems*

MD Raisul ISLAM* (1), Alessandro BOSISIO (1), Gabriele PALUDETTO (2), Carlo TORNELLI (2), Alessandro CIROCCO (3), Fabio LEONARDI (3)
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1330 *From Theory to Practice: Determining Optimal Mesh Topology for Smarter Low Voltage Distribution Networks*

Diana NASCIMENTO (1), Pedro FERREIRA* (1), Pablo PAJARON (1), Rui BENTO (2), Jorge BESSA (2), Pedro DEL ROSAL (3), Pedro CARVALHO (4)
1: EDP Innovation, Portugal; 2: E-REDES, Portugal; 3: EDP Redes, Spain; 4: Amber Tree, Portugal

1338 *Convergence and Accuracy Analysis of an Alternative State Estimation Method for Medium-Voltage Grids*

Wendelin ANGERMANN* (1), Robert SCHÜRHUBER (1), Herwig RENNER (1), Fabian IVOS (1), Thomas WIELAND (2), Maria AIGNER (3), Martin RUHHÜTL (4), David GRUBINGER (5), Christian AMMER (6), Elisabeth HUFNAGL (7)
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1343 *Embedding ESG Performance Into Distribution Network Digitalization: A Strategic Transformation Framework for NEDC*

Mahmood AL KHUSAIBI*, Moosa AL ABRI
Nama Electricity Distribution Company, Oman

1348 *Smart and Innovative Approaches to Flexibility & Resilience in Distribution Networks planning: Insights from Residential Load Profiles and Large-Scale Demand*

Mansoureh ZANGIABADI*
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1350 *Non-Intrusive EV Charging Power Estimation for Improved Pseudo-Measurements in Low-Voltage Grid State Estimation*

Eric DÜRHOLT* (1), Markus ZDRALLEK (1), Bastian BAUHAUS (2)
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1358 *Validation of Incremental Measurement Point Optimization in Low Voltage Grids and the influence of PV reference measurements*

Luka GILDEHAUS* (1), Johanna BAUKE (2), Okka GROENEVELD (1), Marco PAU (3), Frank MARTEN (3)
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1359 *Integration Of D-FACTS Devices In Power Flow Studies Of Distribution Networks Using MANA.*

Tahir KHADIDJA* (1,3), Raphael CAIRE (1,2), Sellé TOURÉ (3)
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1375 *Open Integrated IoT Suite To Master The Challenges Of The Energy Transition*

Smaran SUBBAIAH B G*, Martin GOTTSCHALG, Bitan BHATTACHARYA, Erhard AUMANN, Chaitanya BISALE
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1376 *Grid Guardian – The Platform For Long-Term Monitoring of Compensated Network Parameters*

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1378 *Cluster-Based and Regression-Enhanced Forecasting of Day-Ahead Prosumer Demand Schedules in Distribution Systems*

Finn NUSSBAUM*, Joost LINDNER, Anna-Lena STEEN, Payam TEIMOURZADEH BABOLI, Christian BECKER
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1382 *The Monitoring Of The LV Electric Network Within The Realized Self Optimizing Grid (SoG) Concept Of The MV Electric Distribution Network*

Dušan VUKOTIĆ* (1), Miloš ISAILOVIĆ (2), Stojan ŠIŠKOSKI (1), Sunčica CVETKOVIĆ (2), Božidar ĆIRIĆ (1), Nikola ČOLOVIĆ (2)
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1389 *Analytical Approach To Dynamic Hosting Capacity Assessment In A Distribution System Based On Voltage And Load Time Series*

Kristijan Frano ĆAVAR, Anton MARUŠIĆ, Ivan PERIŠA, Branimir GABRIĆ*, Hrvoje JELIĆ
HEP ODS, Croatia

1407 *Exploring New Levers Against Upper Voltage Violation Constraint, Medium Voltage Shunt Reactor Investigation Feedback*

Djamel HADBI* (1), Mathieu FERRARIS (2), Jocelyn BOUVIER (1), Dominique LEGRAND (1)
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1408 *VICORE: A Hybrid Real-Time Test Platform for PAC Functions Using Virtualized IEDs in Power Distribution Network*

Reza RAZI* (1), Martin LEGRY (1), Frédéric COLAS (1), Xavier GUILLAUD (1), Van-Hoa NGUYEN (2), Thierry COSTE (2), Nicolas FAVARCQ (3)
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1409 *Feeder Forecast for Proactive Congestion Management in Low-Voltage Grids*

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1410 *Pilot Results on Autonomous Inverter Control for LV Grids*

Dániel Péter DIVÉNYI* (1,2), András János HORVÁTH (1,2), László Zsolt GERGELY (3), Balázs TŐZSÉR (3)
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1414 *Data Governance for LV Grid Twins_Lessons from Spain and Portugal*

Angel GIMÉNEZ GARCÍA, Iraitz GORROÑO BIKANDI, Haritz ZUBIA URRUTIA*
Ariadna Grid, Spain

1421 *Impact of a Multi-MW Grid-forming Battery Storage System on Grid-connected Distribution Network Stability*

Boyana GEORGIEVA*, Hendrik LENS
University of Stuttgart, Germany

1423 *Detection of Topological Errors in Distribution Networks Using State Estimation Residual Patterns*

Martin CASTIN (1), Alireza BAHMANYAR (1), Adrien LEERSCHOOL (1), Laurine DUCHESNE (1), Adrien BOLLAND (2), Thomas WEHENKEL (3), Simon GERARD* (3), Damien ERNST (2)
1: Haulogy, Belgium; 2: University of Liège; 3: RESA

1426 *Deployment Of 3D Printing At Enedis: Lessons Learned From The Effective Field Implementation Of A Disruptive Technology In The Maintenance Activities Of A DSO*

Remi LEBLANC*, Franck WEBER
ENEDIS, France

1429 *A Unique Collaboration Model for Designing Retrofit Sensor Systems for Magnefix MD4 Switchgears: It's All About People, Product, Process*

Elise MORSKIEFT* (1), Denny HARMSEN (2), Maarten SLOOT (2), Bram POSTHUMA (1), Peter MEIJER (1), Martin BINNENDIJK (1)
1: Eaton; 2: Alliander

1433 *Simulation and Realization of Dynamic Grid Coupling and Network Reconfiguration with Real-Time Grid Condition Monitoring*

Maximilian GERHARD*, Frederik GIELNIK, Michael SURIYAH, Thomas LEIBFRIED
Karlsruhe Institute of Technology, Germany

1439 *Electric Vehicle Hosting Capacity in Low-Voltage Networks Considering the Probability of Concurrent Charging*

Loïc PEROT (1), Manon CORNET (1), Alireza BAHMANYAR (1), Laurine DUCHESNE* (1), Simon GÉRARD (3), Thomas WEHENKEL (3), Damien ERNST (2)
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1446 *Dynamic Phase Balancing for Voltage Quality Improvement in LV Networks: Field Trial Results*

Rémy CLEENWERCK (1,2), Martin CATON* (3), Peter LANG (4), Jacob LYNCH (5), Peter CROSSLEY (3,6), Jan DESMET (1), Martin ADE-HALL (3)
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1453 *The Case of the Shunt Reactor in Substation 110/35/20 kV Krk, Croatia*

Ivica RADETIĆ*, Igor VOLARIĆ, Josip ŽUTOLIJA
HEP ODS d.o.o., Croatia

1457 *Automated AI-Based Asset Mapping: Lessons Learned From Large-Scale Deployment in Distribution Network*

André SIH*, Thiago CAZES, Rodrigo FERREIRA, Carlos BISCHOFF
Fu2re, Brazil

1461 *Maps of Hosting Capacity for Distribution Networks: Aligning Theoretical KPIs with Strategic Decision-Making Needs*

Tommaso DIECI* (1), Davide FRATELLI (1), Matteo SPILLER (1), Corrado Maria CAMINITI (1), Aleksandar DIMOVSKI (1), Marco MERLO (1), Pierluca PINCIOLLA (2)
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1469 *Proactive Distribution Grid Operation Enabled by Continuous Power Quality Monitoring and Analytics*

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1474 *Qualification of a Data-Driven Grid Modelling Approach for Low Voltage Networks*

Alexandre DELYON*, Pacome ARMAGNAT, Clementine BENOIT, Chloé LUCAS-MONTFORT, Noemi VARGHA
Odit-e Sagemcom, France

1481 *Automating Fault Location, Isolation, and Service Restoration in German Distribution Networks: Cost-Benefit Analysis and Lessons Learned from the NETZlabor Allgäu*

Felix STREHLE*, Lukas GROMES, Paul HORN, Christian LAKENBRINK, Miriam BADER
Netze BW, Germany

1482 *Small-Scale DC Grid Demonstration in Port of Funchal*

Pedro COSTA (1,4), Luis RODRIGUEZ (1,4), Pedro NETO (1,4), Diogo REIS (2,3), Anne NIIN (1,4), Lucas PEREIRA (3,4), Hugo MORAIS* (1,4)
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1483 *Enabling Interoperable EV Integration through Protocol Translation: Bridging Smart Charging Infrastructure with Operational Grid Systems*

Saba ZAHEDIEH* (1), Georgios KARAMANIS (2), Anastasios OULIS ROUSIS (2), Aikaterini BOURAZERI (1)
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1484 *Qualification Of A Data-Driven GIS Enhancement Approach For Low-Voltage Grids*

Benoît COLANGE, Romain BAILLY*, Chloé LUCAS-MONFORT, Noemi VARGHA
Odit-e, France

1490 *On the Evolution of Reactive Power Demand in Swiss Medium and Low Voltage Networks*

Alexandre MACHER (1), Corrodi YVES (2), David LEHNEN* (2)
1: ETH Zürich, Switzerland; 2: CKW AG, Switzerland

1492 *Fast and Accurate Grid State Estimation Using Physics-Informed Graph Neural Networks*

Corentin TISSIER*, Rafael CARRILLO, Diya ACHI, Pierre-Jean ALET
CSEM, Switzerland

1493 *Field Evaluation of a Phase Balancer in Low-Voltage Networks*

Balázs TŐZSÉR*, József, Lehel ZOLTÁNI, István TÁCZI DR.
E.ON Hungary, Hungary

1496 *OptiQU: Coordinated Multi-Level Voltage and Reactive Power Control for Enhanced Voltage Quality and Secure Grid Operation*

Irene HAMMERMEISTER* (1), Eric TÖNGES (2), Nils BORNHORST (2), Johannes HEID (1,2), Gabriela FRITZLER (1), Timo REHWALD (1), Andrea SCHOEN (1), Ronald HALBAUER (3), Jan MESCHEDE (3), Julia HOLL (4), Sina STRAUSSBERGER (4), Andrey LUZHBIN (5), Maximilian Niedhammer (5), Mischa Geiger (5), Aaron Eicker (6), Maurice Raetsch (6), Alfio Spina (6), Johannes Dieplinger (7), Christian Mayer (7), Josef Bayer (8), Thorsten Reske (9), Dominik Hilbrich (1), Michael Kramer (4)
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1503 *Anticipating the Human Impact of AI : A Workshop-Based Approach of transformation at Enedis*

Aude VINZERICH, Melanie CAZES*
Enedis, France

1504 *Automated Consolidation Of Dispersed DSO Data Resources Into A Consistent Digital Twin Of The Distribution Grid*

Fabian BÖHM* (1,2), Benjamin SAWICKI (2), Claudio STUCKI (1), Pulkit NAHATA (2), Gabriela HUG (2), Lukas ORTMANN (1)
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1511 *E.ON-Lab: Prescaling The Transformation Of The Power Grid Into A Digital, Flexible, And Intelligent System*

Florian HINTZ* (1), Esko NOCKMANN (2), Peter LUX (3)
1: Avacon Netz GmbH, Germany; 2: Westnetz GmbH, Germany; 3: Edis Netz GmbH, Germany

1520 *Implementation of Real-Time Fault Level Monitoring to Facilitate Decarbonisation Growth*

Mark KENT*, Ralph EYRE-WALKER, Russell BRYANS
SP Energy Networks, United Kingdom

1527 *Digital Twin for Future Power and Energy Systems: A Review*

Morteza VAHID-GHAVIDEL*, Sahar SEYYEDEH-BARHAGH, Hannu LAAKSONEN
University of Vaasa, Finland

1539 *Building a Virtual Power Plant: Providing Ancillary Services and Local Congestion Management with a Large-scale Fleet of Public EV Chargers*

Maud TOUSSAINT SCHURMANS*, Jelle GARCET, Louis SOKAL, Tommaso DIFONZO
Engie Laborelec, Belgium

1542 *A Microservice-Oriented Integration Layer for LV Management Tools*

Gil SAMPAIO (1), Jacinta FERREIRA (1), José SOUSA (1), João FERNANDES (2), Raquel FIGUEIREDO (2), José OLIVEIRA* (2)
1: INESC TEC; 2: Eneida.io

1544 *Generating Insights for Low-Voltage Distribution Grids from Per-Phase Smart Meter Data*

Mattia SECCHI* (1), Anton HØYER TROELSEN (1), William Ancher KROGSGAARD AMMENTORP (1), David Valentin TANASE (1), Lunodzo MWINUKA (1), Christian FOTTELER (2), Henriette DYHR RAHBEK (3), Carsten BUHL NIELSEN (3), Kai HEUSSEN (1)
1: Technical University of Denmark (DTU); 2: INILAB; 3: Cerius-Radius

1548 *A Case Study on the Operation of the Change Simulator for the Prevention of Line Electrical Distributon Due to Worker's Negligence*

Yu jung AN*, Jeong hun YOO
KEPCO, Republic of South Korea

1554 *Integrating Data Engineering And Data Science Tools To Enhance Distribution Network Performance*

Bruno OLIVEIRA*, Tauan OLEA
EDP São Paulo, Brazil

1560 *A Fault Current Limiting Circuit Breaker Pilot Installation*

Jesper MAGNUSSON* (1), Johan NOHLERT (1), Thomas ERIKSSON (1), Martin KROPF (2)
1: ABB AB, Sweden; 2: ABB AG, Germany

1562 *Field Validation and Perspective on Distribution-scale Grid-Forming Battery Storage for Synthetic Inertia*

Istvan TACZI, Bence BERECZKI, Balint HARTMANN*, Peter SORES, Istvan VOKONY
Budapest University of Technology and Economics, Hungary

1565 *Remote Protection for Digital Substations – Piloting Experiences and Analysis*

Anna KULMALA* (1), Ontrei RAIPALA (1), Petri HOVILA (1), Henry NIVERI (1), Konsta ANTIKAINEN (2), Tomi ÖSTER (3)
1: ABB Distribution Solutions; 2: Suur-Savon Sähkö; 3: Järvi-Suomen Energia

1566 *Proactive Detection of Unauthorized Cryptocurrency Mining Loads in Distribution Networks Using Integrated Electrical and Privacy-Preserving Telecom Data*

Abdolhossein ESMAEILZADEH*, Habib allah RAVAGHI ARDABILI, Rashin ILKA, Ali KOMASI, Reza KORDBACHE
Great Tehran Electricity Distribution Company, Iran

1568 *Implementing And Performance Of Innovative Grid Technologies Increased Grid Utilization And Faster Grid Development For Smart Grid Distribution Networks*

Mark NORTON* (1,2), Peter HUGHES (3,2), Dominic QUENNELL (4,2), Leo RICHARD (5,2), Alexander KRISTENSEN (6,2)
1: Smart Wires, Ireland; 2: CurrENT Europe; 3: CTC Global; 4: Enertechnos; 5: Epsilon-Composite; 6: Magtech

1569 *Deployment of Innovative Operating Technologies to Mitigate LV Congestions: Identified Field Problems and Solutions*

Ane MARTÍNEZ*, Alena ULASENKA, Gorka PUENTE, Luis DEL RÍO, Álvaro ORTIZ, Santiago GUTIERREZ
Ormazabal, Spain

1571 *Embedding Flexibility-Driven Innovation in Distribution System Planning*

Gian Giuseppe SOMA*, Gianni CELLI, Fabrizio PILO
University of Cagliari, Italy

1573 *Prediction-Based Control of a Building-Integrated DC Microgrid with HESS*

Daniela ESER*, Erik WOEHR, Loris SCHMIT, Jonathan HUFGARD, Michael SURIYAH, Thomas LEIBFRIED
Karlsruhe Institute of Technology, Germany

1574 *LV outage Management in ADMS*

François CHEVALIER, Tom CARRON*, Henri MEURÉE
Sibelga SO, Belgium

1577 *Reduction of the Impact of Power Measurement Errors on Grid Parameter Estimation*

Johannes ROLINK*
FH Münster - University of Applied Sciences, Germany

1579 *Lessons Learned from Developping a DERMS Optimization Platform in a Large-Scale Distribution Network*

Paul JAVAL (2), Saoussen ABIDI (1), Tristan BASLER (1), Ilyas GLAIB (1), Jean JODEAU (1), Arthur LEENE (1), Pierre MORDANT (1), Lucas SELINI (1), Emilie PIC (1), Hamza ZAKRAOUI (1), Germain FRANCOIS* (1)
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1582 *Automated Metro-Style Low Voltage Grid Visualization for Rapid Grid Development*

Lennard SCHAAP* (1), Joan RESSING (1), Anne VAN DALSEN (1,2), Rick VAN KASTEREN (1,2), Sterre DE LANGE (1)
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Theme 3 – New Regulation and Practices to Spark Innovation and Minimize Business Risk

1115 *Connection Of Distributed Electrical Energy Generation Sources With Enabled P/U Characteristic*

Matjaž KLANČNIK*, David POČIVAVŠEK
Elektro Celje, d.d., Slovenia

1120 *Adopting the Smart Grid Maturity Model to Drive Regulatory Innovation and Manage Business Risk: The Nama Electricity Distribution Experience, Oman.*

Ahmed ALSHAQSI*
The Authority for Public Services Regulation, Oman

1127 *KYEC – Leveraging Artificial Intelligence for Consumer Empowerment in Smart Metering*

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1198 *Designing Active Operation in Low-Voltage Distribution Grids: Requirements, Interfaces and Roadmap*

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Takaya ANEGAWA* (1,2), Kyosuke TAKAYAMA (2), Atsushi ISHIGAME (2), Takumi YOSHIOKA (1)
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Maria RODNAYA*, Luca DI STEFANO, Rita LEOPARDI
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Manuel ROMEO MONTERDE, Tomás GÓMEZ SAN ROMÁN, Miguel Ángel RUIZ HERNÁNDEZ*, José Pablo CHAVES ÁVILA
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Giacomo VIGANO', Marco ROSSI, Simona SELLITTO*
Ricerca sul Sistema Energetico, Italy

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Liza TROSHKA* (1), Steve QUINN (1), Nigel TURVEY (2), Furong LI (2)
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Karen PLATT (1), Tim BUTLER (1), Andy PRICE-ALLISON* (1), Naomi MORROW (2), Esther DUDEK (1), Fuqian ZENG (1), Emma PYM (3), Peter WELDON (3), Efrosyni THEOCHAROUS (3)
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1: FfE, Germany; 2: Universität Kassel

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Joé WENGLER*, Xavier LEUNG, Jonas WÄFLER, Michael AUER, Ariane KOLLER, Gunnar FUHRMANN
ewz, Switzerland

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Dan TELÉN* (1), Pirjo HEINE (1), Jukka RINTA-LUOMA (2), Sonja NURMIAINEN (2), Suvi PELTOKETO (2)
1: Helen Electricity Network Ltd., Finland; 2: Fingrid Oyj, Finland

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Marin MAJSTOROVIĆ*, Drago BAGO, Sonja SUŠAC, Mia PREVIŠIĆ, Ivan ŠIMOVIĆ
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Helena OLSSON, Thomas CHAVERONDIER*, Thibaut BUFFARD
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Mansoureh ZANGIABADI*
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Xavier WEISS* (1), Lars NORDSTRÖM (1), Patrik HILBER (1), Arne BERLIN (2)
1: KTH, Royal Institute of Technology, Sweden; 2: Vattenfall Eldistribution AB, Sweden

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Alain GRISVAL (1), Numa COUNIOT (2), Thomas LAPORTE* (3)
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Frederik GIELNIK*, Victor WEISE, Olga KINAS, Michael SURIYAH, Thomas LEIBFRIED
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Antonia WEBER* (1,2), Florian DINGER (2), Dominik SCHLIPF (2), Frank TRUCKENMÜLLER (1), Gernot SCHULLERUS (1)
1: Reutlingen University, Germany; 2: TransnetBW GmbH, Germany

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Stephan CEJKA*, Franz ZEILINGER
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Anna-Lena STEEN*, Finn NUSSBAUM, Payam TEIMOURZADEH BABOLI, Christian BECKER
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1: University of Borås, Sweden; 2: Blekinge Institute of Technology

1549 *Battery Bidding Strategies under Extreme Price Events: A Comparative Study of DRL Approaches Using Quantile-Spike Forecasting*

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