

112th edition

AEIT International 2020 Annual Conference

1st Virtual Edition - 23-25 September 2020

VIRTUAL CONFERENCE



SPECIAL SESSION

Resilience of Electrical Systems and Climate Changes



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TS01 (Special Session): Resilience of Electrical Systems and Climate Changes

Chair:

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TS01 (Special Session): Resilience of Electrical Systems and Climate Changes

Technical Outline

Unexpected extreme events ranging from cyber-security attacks, adverse weather conditions and other natural disasters, like earthquakes, landslides, and flooding, may be at the origin of human and environmental concerns potentially imposing serious risks to electric generation, transmission, and distribution systems.

In proactive management of such risks and to assure a continuous, reliable and affordable supply of energy, power transmission and distribution system operators are continuously engaged in development and deployment of innovative technologies that can help ensure a higher resilience of their systems during such events.

Topics

- Resilience of critical infrastructures to extreme events: prevention and recovery actions;
- Structural and operational resilience of transmission and distribution electrical networks;
- Climate changes;
- Decarbonization process and future developments of electrical systems;
- Effects of adverse weather conditions and other natural disasters on electrical systems;
- Metrics for quantification and techniques for evaluation of resilience in electrical systems;
- Advances in design, planning, and operation of electrical systems for enriched resilience;
- Aids from space: satellites, drones and radar;
- Enhanced resilience through energy storage deployment and microgrids.

ts01_p01

A feasibility analysis aimed at defining an alert system for Distribution MV Underground Cables

Riccardo Bonanno, Matteo Lacavalla (Ricerca sul Sistema Energetico - RSE S.p.A, Italy)

speaker: Riccardo Bonanno

ts01_p02

Laboratory Ageing Thermal Cycles of MV Cable Joints: results of different diagnostic techniques

Johnny Borghetto (Ricerca sul Sistema Energetico - RSE S.p.A., Italy); Alfredo Contin (DIA University of Trieste, Italy); Andrea Morotti, Andrea Pegoiani (Unareti S.p.A., Italy); Giovanni Pirovano (Ricerca sul Sistema Energetico - RSE S.p.A., Italy); Danilo Sirtori (Unareti S.p.A., Italy); Carlo Tornelli (Ricerca sul Sistema Energetico - RSE S.p.A., Italy)

speaker: Giovanni Pirovano

ts01_p03

Tools and strategies for managing critical grid situations and extreme weather events

Laura Campisano, Patrizio Ferretti, Stefano Neri, Cristiano Quaciari, Marco Pierno, Enrico Maria Carlini (Terna Rete Italia, Italy)

speaker: Patrizio Ferretti

ts01_p04

Exacerbation of heat waves and droughts over Italy in the next decades under different socio-economic pathways

Paola Faggian, Goffredo Decimi (Ricerca sul Sistema Energetico - RSE S.p.A., Italy)

speaker: Paola Faggian

ts01_p05

Probabilistic security-constrained preventive redispatching in presence of correlated uncertainties

Andrea Pitto, Diego Cirio, Emanuele Ciapessoni (Ricerca sul Sistema Energetico - RSE S.p.A., Italy)

speaker: Andrea Pitto

ts01_p06

Modeling the OHL vulnerability to strong wind

Emanuele Ciapessoni, Diego Cirio, Giovanni Pirovano, Andrea Pitto (Ricerca sul Sistema Energetico - RSE S.p.A., Italy); Federico Falorni, Alessandro Lazzarini, Francesco Marzullo (Terna Corporate S.p.A., Italy)

speaker: Andrea Pitto

ts01_p110

**Islanding Operation During the 2019 Alto Adige Snowstorm
Emergency**

E.M. Carlini, A. Pesce, M. Piazza, A. Salmaso, C. Vergine (Terna Rete Italia, Italy), A. Berizzi, D. Falabretti, C. Mattevi (Politecnico di Milano, Italy)

speaker: Davide Falabretti

ts01_p07

**A comprehensive method to evaluate risks exposition of HV
transmission lines in order to define monitoring priority**

E.M. Carlini, L. Barison, C. Genovese, C. Quaciari, A. Pesce, F. Pavan, N. Rivabene, G. Luzzi (Terna, Italy)

speaker: Luca Barison

ts01_p08

Current endurance testing of termination earth connections for offshore wind farm array cables

Alexander Wilkinson (Prysmian Group, United Kingdom); Luigi Colla (Prysmian Group, Italy); Stuart Williams (Prysmian Group, United Kingdom)

speaker: Alexander Wilkinson

ts01_p09

Evaluation of thermal aging indicators for power system development

Michela Migliori, Stefano Lauria (Sapienza University of Rome, Italy); Enrico Maria Carlini, Luca Piemonti, Corrado Gadaleta, Benedetto Aluisio (Terna S.p.A., Italy); Giuseppe Forte (Politecnico di Bari, Italy)

speaker: Benedetto Aluisio

ts01_p10 **Enel Global Infrastructure and Networks 4R Innovative Resilience Strategy for power distribution networks**

Francesco Amadei, Christian D'Adamo, Franco Buiatti, Enrico Valigi, Jacopo Santoni (Enel Global Infrastructure and Networks, Italy)

speaker: Jacopo Santoni

ts01_p11 **Resilience Assessment in TDE's Distribution Grid: Risk Model for Tree Falls**

Massimo Cresta (TDE, ASM Terni SpA, Italy); Fabio Massimo Gatta, Alberto Geri and Marco Maccioni (University of Rome Sapienza, Italy); Marco Paulucci (TDE, ASM Terni SpA, Italy); Andrea Rizzo (University of Rome Sapienza, Italy)

speaker: Marco Maccioni

ts01_p12 **MV Underground Power Cable Joints Premature Failures**

Massimo Pompili (University of Rome Sapienza, Italy); Luigi Calcara (Sapienza Università di Roma, Italy); Silvia Sangiovanni (Sapienza University of Rome, Italy)

speaker: Massimo Pompili