

PMAPS 2008 Paper Sessions

MONDAY, May 26 - 15:30 – 17:00

Special Session on Better Accounting for Forecast Uncertainty in Decision Making Related to Wind Generation (Session Chair: P. Pinson)

Multivariate Time Series Models Applied to the Assessment of Energy Storage in Power Systems

B. Klöckl

Verbund Austrian Power Grid, Vienna, Austria, European Union

Modeling of Spatial Dependence in Wind Power Forecast Uncertainty

G. Papaefthymiou¹; P. Pinson²

¹Delft University of Technology, the Netherlands; ²University of Denmark

Benefits of Stochastic Scheduling for Power Systems with Significant Installed Wind Power (PMAPS ID Number 151)

A. Tuohy¹; E. Denny¹; M. O'Malley¹; P. Meibom²

¹University College Dublin; ²Technical University of Denmark

Simulation of Trading Arrangements Impact on Wind Power Imbalance Costs (PMAPS ID Number 162)

M. Amelin

Electric Power Systems Lab, Stockholm, Sweden

TUESDAY, May 27 - 8:00 – 9:45

Transmission I (Session Chair: A. Chowdhury)

Cross-Entropy Based Rare-event Simulation for the Identification of Dangerous Events in Power Systems (PMAPS ID Number 127)

F. Belmudes; D. Ernst; L. Wehenkel

University of Liège, Belgium

Combined Adequacy and Static Security Considerations in Transmission System Reinforcement

W. Wangdee¹; R. Billinton²

¹British Columbia Transmission Corp., Vancouver, Canada; ²University of Saskatchewan, Saskatoon, Canada

Dynamic Security Risk Assessment and Optimization of Power Transmission System

D. Wang^{1,2}; Y. Yu¹

¹Tianjin University, Tianjin, China; ²Hebei Polytechnic University, Hebei, China

Electric Power System Multiple Contingencies Analysis Using the Rough Set Theory

C. I. Faustino Agreira¹; C. M. Machado Ferreira¹; F. P. Maciel Barbosa²

¹Instituto Superior de Engenharia de Coimbra, Portugal; ²Universidade do Porto, Portugal

TUESDAY, May 27 - 8:00 – 9:45

Distribution I (Session Chair: R. Dugan)

Risk Analysis of Distribution Systems Using Value at Risk Methodology

A.Schreiner; G. Balzer

TU-Darmstadt, Darmstadt, Germany, Armin Precht, EnBW Regional AG, Stuttgart, Germany

Application of Bayesian Networks in Distribution System Risk Management

K. Sand¹; M. D. Catrinu¹; G. H. Kjolle¹; S. Bonnoit²; J. Aupied²

¹SINTEF Energy Research; ²EdF R&D

Risk Informed Decision Support for Reinvestments in Distribution Systems

M. K. Istad¹; O. Gjerde¹; M. D. Catrinu¹; A. Nybø¹; D. E. Nordgård²

¹SINTEF Energy Research, Trondheim, Norway; ²Norwegian University of Science and Technology, Trondheim, Norway

Review of the Risk Management at a Distribution System Operator

L. Bertling¹; C. J. Wallnerström¹; J. Hasselström²; P. Bengtsson²

¹Royal Institute of Technology (KTH), Stockholm, Sweden; ²Fortum Distribution, Karlstad, Sweden

Wind I (Session Chair: E. O'Neill- Carrillo)

Probabilistic Forecasting of Wind Power at the Minute Time-scale with Markov-switching Autoregressive Models

P. Pinson; H. Madsen

Technical University of Denmark

Wind Power Forecasting with Entropy-Based Criteria Algorithms

R. J. Bessa^{1, 2}; V. Miranda^{1, 2}; J. Gama³

¹INESC Porto, Instituto de Engenharia de Sistemas e Computadores do Porto, Portugal; ²FEUP, University of Porto, Portugal; ³INESC Porto LA/LIAAD, Laboratory of Artificial Intelligence and Decision Aid, and FEP, Porto, Portugal

The Effect of Markov Chain State Size for Synthetic Wind Speed Generation (PMAPS ID Number 157)

F.O. Hocaoglu; O.N. Gerek; M.Kurban

Department of Electrical and Electronics Engineering, Anadolu University, Turkey

Optimal Wind Power Location on Transmission Systems – A Probabilistic Load Flow Approach (PMAPS ID Number 148)

D. J. Burke; M. J. O'Malley

University College Dublin, Rep. of Ireland

TUESDAY, May 27 - 10:15 – 12:00

Generation Planning (Session Chair: J. McCalley)

Probabilistic Power Generation Expansion Planning in a Competitive Electricity Market

Adelino J.C. Pereira¹; J. T. Saraiva²

¹Instituto Superior de Engenharia de Coimbra, Portugal; ²FEUP/DEEC- Univ. do Porto and INESC Porto – Instituto de Engenharia de Sistemas e Computadores do Porto, Campus da FEUP, Porto Portugal

Unit Availability Considerations in Composite-System Generation Planning

P. Jirutitijaroen¹; C. Singh²

¹National University of Singapore, Singapore; ²Texas A&M University, USA

Reliability Analysis of Generating Capacity of Mexico's National Interconnected Power System

L. Conde-Lopez¹; G. Gutiérrez-Alcaraz²

¹Comision Federal de Electricidad, Puebla, México; ²Instituto Tecnológico de Morelia, Michoacán, México

Applying Load Factors to the Mean-Variance Analysis for Fuel Diversification

D. Gotham¹; P. Preckel¹; S. Ruangpattana¹; K. Muthuraman²; R. Rardin³

¹State Utility Forecasting Group, Purdue University, West Lafayette, IN.

²McCombs School of Business, University of Texas, Austin, TX.

³University of Arkansas, Fayetteville, AR.

Generation Scheduling – Load Forecasting (Session Chair: L. Goel)

Applying Stochastic Programming to the Unit Commitment Problem (PMAPS ID Number 098)

P. A. Ruiz¹; C. R. Philbrick¹; E. Zak¹; K. W. Cheung¹; P. A. Ruiz²; P. W. Sauer²

¹AREVA T&D, Redmond, WA, USA; ²University of Illinois at Urbana-Champaign, Urbana, IL, USA

Unit Commitment Scheduling by Using the Autoregressive and Artificial Neural Network Models Based Short-Term Load Forecasting (PMAPS ID Number 152)

M.Kurban; U.B. Filik

Anadolu University, Eskisehir, Turkey

Modeling of the Load Duration Curve Using the Asymmetric Generalized Gaussian Distribution: Case of the Tunisian Power System (PMAPS ID Number 155)

Ould Mohamed M. Mohamed¹, M.Jaïdane-Saïdane¹, J. Souissi²

¹Signals and Systems Research Unit, Ecole Nationale d'Ingénieurs de Tunis (ENIT); ²Studies and Planning Direction, Société Tunisienne d'Electricité et du Gaz (STEG)

Spinning Contingency Reserve Valuation in Systems with Non-Identical Generators (PMAPS ID Number 018)

P. A. Ruiz; P. W. Sauer

University of Illinois at Urbana-Champaign, Urbana, IL, USA

TUESDAY, May 27 - 8:00 – 9:45

Ageing Models (Session Chair: F. Turner)

Verification of Markov Models of Ageing Power Equipment (PMAPS ID Number 002)

J. Sugier¹; G. Anders²

¹Inst. of Computer Engineering, Control and Robotics, Wrocław University of Technology, Poland;

²Dept. of Microelectronics of the Technical University of Lodz

Strategies to Refurbish or Maintain Control command System of Substation of Electrical Network (PMAPS ID Number 117)

P. Carer¹; C. Briend²

¹EDF R&D, France; ²Keyrus France

Circuit-Breaker Estimation with the Aid of Ageing Models (PMAPS ID Number 050)

L. Asgarieh¹; G. Balzer¹; A. J. Gaul²

¹Technische Universität Darmstadt, Darmstadt, Germany; ²RWE Energy, Dortmund

Weather Impact on Components Reliability: A Model for MV Electrical Networks (PMAPS ID Number 116)

P. Carer¹; C. Briend²

¹EDF R&D, France, ²KEYRUS France

WEDNESDAY, May 28 - 8:00 – 9:45

Transmission II (Session Chair: S. Krishnasamy)

Tabu Search Applied to Transmission Expansion Planning Considering Losses and Interruption Costs (PMAPS ID Number 059)

A.M. Leite da Silva¹; L.C. Resende¹; L.S. Rezende¹; L.A.F. Manso²

¹Institute of Electrical Systems and Energy, Federal University of Itajubá – UNIFEI, MG, Brazil;

²Federal University of São João del-Rei – UFSJ, MG, Brazil.

Risk-based Transmission Expansion (PMAPS ID Number 004)

Y.Li; J. D. McCalley; S Ryan

Iowa State University, Ames, IA, USA

On Operational Risk Assessment in Transmission Systems- Weather Impact and Illustrations Example (PMAPS ID Number 145)

M.H.J. Bollen¹; L. Wallin²; L. Bertling²; T. Ohnstadt³

¹STRI AB, Askim, Sweden; ²Svenska Kraftnät, Sweden; ³Statnett, Oslo, Norway.

Transmission Loss Allocation Using Normalized Loss Weight Factors (PMAPS ID Number 154)

S. N. Keshmiri; M. Ehsan

Sharif University of Technology, Tehran, IRAN

WEDNESDAY, May 28 - 8:00 – 9:45

Distribution II (Session Chair: L. Wehenkel)

Multiobjective Maintenance Policy for a Distribution System. An Application Study

(PMAPS ID Number 158)

P. Hilber; L. Bertling

KTH (Royal Institute of Technology), School of Electrical Engineering, Stockholm, Sweden.

Estimation of Sojourn Time Distribution Parameters Based on Expert Opinion and Condition Monitoring Data (PMAPS ID Number 071)

T. M. Welte^{1, 2}; A. O. Eggen¹

¹SINTEF Energy Research, Trondheim; ²Norwegian University of Science and Technology (NTNU), Trondheim, Norway

A Stochastic Weather Dependent Reliability Model for Distribution Systems (PMAPS ID Number 029)

K. Alvehag; L. Söder

Royal Institute of Technology (KTH).

Renewal Planning of Aged Distribution Networks (PMAPS ID Number 093)

E. Ghiani; F. Pilo, G. Celli; S. Mocci

University of Cagliari, Cagliari, Italy

Wind II (Session Chair: A. Irizarry-Rivera)

Management of Energy Storage Coordinated with Wind Power under Electricity Market Conditions (PMAPS ID Number 085)

L. M. Costa; L. Bourry; J. Juban; G. Kariniotakis

Center for Energy and Processes of the École des Mines de Paris, France

Reliability Cost/Worth Associated with Wind Energy and Energy Storage Utilization in Electric Power Systems (PMAPS ID Number 021)

B. Bagen¹; R. Billinton²

¹System Planning Department of Manitoba Hydro, Winnipeg, Canada

²Power System Research Group University of Saskatchewan, Saskatoon, Canada

An Alternative Method for Estimating Wind-Power Capacity Credit based on Reliability Evaluation Using Intelligent Search (161)

L. F. Wang; C. Singh

Texas A&M University

WEDNESDAY, May 28 - 10:15 – 12:00

Distributed Generation (Session Chair: A. Testa)

Reliability-Based Stand-Alone Photovoltaic System Sizing Design- A Case Study (PMAPS ID Number 099)

H; Ge; L. Ni; S; Asgarpoor
University of Nebraska – Lincoln

A Risk-based Model for Cogeneration Resource Planning (PMAPS ID Number 083)

E. Carpaneto, G. Chicco, P. Mancarella; A; Russo
Politecnico di Torino, Torino, Italy

Considering a Customer Dissatisfaction Index in the Reliability of Distribution Network with Distributed Energy Resource (PMAPS ID Number 139)

Y. Yang¹; M. H. J. Bollen²
¹STRI AB, Ludvika, Sweden; ²STRI AB, Askim, Sweden

Power System Reliability (Session Chair: W. Wangdee)

Aleatory and Epistemic Uncertainty Considerations in Power System Reliability Evaluation (PMAPS ID Number 025)

R. Billinton; D. Huang
University of Saskatchewan, Saskatoon, Saskatchewan, Canada

Artificial Neural Networks Applied to Reliability and Well-being Assessment of Composite Power Systems (PMAPS ID Number 060)

¹A.M. Leite da Silva; L.C Resende¹; L.A.F. Manso²; V. Miranda^{3, 4}
¹Institute of Electric System and Energy, Federal University of Itajubá – UNIFEI, Brazil; ²Federal University of São João del-Rei – UFSJ, Brazil; ³Institute for Systems and Computer Engineering of Porto – INESC Porto; ⁴Faculty of Engineering of the University of Porto – FEUP, Portugal

Assessment of Transmission System Component Criticality in the De-regulated Electricity Market (PMAPS ID Number 016)

G. A. Hamoud
Hydro One Inc., Toronto, Ontario, Canada

Failure Probability (Session Chair: G. Anders)

Failure Probabilities of Existing Overhead Shield Wires (PMAPS ID Number 007)

L. M. Costa; F. Bourry; J. Juban; G. Kariniotakis
Center for Energy and Processes of the École des Mines de Paris, France

Prediction of Circuit Breaker Time-to-Failure considering Generation Capacity Growth (PMAPS ID Number 065)

Q. Binh Dam; A. P. Sakis Meliopoulos
Georgia Institute of Technology, Atlanta, GA, USA

Probabilistic Assessment of Generator Failure Using the Analytic Hierarchy Process (AHP) (PMAPS ID Number 146)

N. Amyot¹; C. Hudon¹; M. Bélec¹; L. Lamarre¹; N.D. Nguyen²
¹Institut de recherche d'Hydro-Québec (IREQ), Canada; ²Hydro-Québec Production, Canada

Statistical Analysis of Partial Discharge Patterns and Knowledge Extraction in MV Cable Systems (PMAPS ID Number 052)

S. Mousavi Gargari¹; P.A.A.F. Wouters¹, P.C.J.M. van der Wielen²; E.F.Steenis^{1,2}
¹Eindhoven University of Technology, The Netherlands ²KEMA, Arnhem, The Netherlands

WEDNESDAY, May 28 - 13:30 – 15:15

Transformer Reliability (Session Chair: S. Asgapoor)

Validation of Reliability Forecasting for Power Transformers (PMAPS ID Number 009)

A. van Schijndel¹, J. M. Wetzer^{1, 2}; P. A.A.F. Wouters¹

¹Group Electrical Power Systems, Eindhoven University of Technology, The Netherlands; ²KEMA, Arnhem, The Netherlands

Monte Carlo Simulation to Assess the Optimum Number of Distribution Transformers (PMAPS ID Number 061)

J. G. de C. Costa; A. M. Leite da Silva

Institute of Electrical Systems and Energy, Federal University of Itajubá – UNIFEI, MG, Brazil

Modelling Technique for Power Transformer Replacement Waves (PMAPS ID Number 008)

A. van Schijndel¹; J. M. Wetzer^{1, 2}; P. A.A.F. Wouters¹

¹Group Electrical Power Systems, Eindhoven University of Technology, The Netherlands; ²KEMA, Arnhem, The Netherlands

Use of Mobile Unit Transformers in High Voltage Load Stations (PMAPS ID Number 017)

G. A. Hamoud

Hydro One Inc., Toronto, Ontario, Canada

Electricity Markets (Session Chair: L. Bertling)

Reliability Pricing Using Contingent Contracts (PMAPS ID Number 101)

G. B. Sheblé; G. Bingham

Portland State University, Portland, OR, USA

Reliability Improvement of Restructured Power Systems with Diversified Demand Side Load Shift (PMAPS ID Number 120)

L. Goel; Q. Wu; P. Wang

School of EEE, Nanyang Technological University, Singapore

The Value of Technical Information in the Unbundled Electric Market (PMAPS ID Number 063)

G. Gutiérrez-Alcaraz¹; G. B. Sheblé²

¹Instituto Tecnológico de Morelia, Morelia, Michoacan, Mexico; ²Iowa State University, Ames, USA

A Spot-Risk-Based Approach for Addressing Problems of Decision-Making Under Uncertainty (PMAPS ID Number 077)

L. M. Costa; F. Bourry; J. Juban; George Kariniotakis

Center for Energy and Processes of the ´ Ecole des Mines de Paris, France

WEDNESDAY, May 28 - 13:30 – 15:15

Optimal Allocation of Power Equipment (Session Chair: J. Cedeño)

A Probabilistic Approach for Optimal Capacitor Allocation in Three Phase Unbalanced Distribution Systems

G. Carpinelli¹; D. Proto¹; C. Noce²; A. Russo³; P. Varilone⁴

¹Università degli Studi di Napoli, Napoli, Italy; ²Enel Distribuzione, Roma, Italy; ³Politecnico di Torino, Torino, Italy; ⁴Università degli Studi di Cassino, Cassino, Italy.

A Multi-Objective Approach for the Optimal Distributed Generation Allocation with Environmental Constraints (PMAPS ID Number 069)

G. Celli; S. Mocci; F. Pilo; G. G. Soma
University of Cagliari, Cagliari, Italy

Optimal Location of Measurement Devices in Active Distribution Networks (PMAPS ID Number 053)

C. Muscas; F. Pilo; G. Pisano; S. Sulis
University of Cagliari, Cagliari, Italy

WEDNESDAY, May 28 - 15:30 – 17:00

Protection (Session Chair: M. Kezunovic)

Analysis and Design of Overload Protections for HV Lines with a Probabilistic Approach (PMAPS ID Number 142)

J. S. A. Carneiro, L. Ferrarini
Politecnico di Milano, Milan, Italy

Statistical Analysis Based Learning Method for Locating Faults in Power Distribution Systems (PMAPS ID Number 119)

J. Mora-Flórez¹; S. Pérez-Londoño¹; N. Estrada-Cardona²

¹Technological University of Pereira, Pereira, Colombia; ²ElectroHuila, Neiva, Colombia

Reliability Analysis of Power System Based on Generalized Stochastic Petri Nets (PMAPS ID Number 141)

J. S. A. Carneiro, L. Ferrarini
Politecnico di Milano, Milan, Italy

Uncertainty Analysis- Sags (Session Chair: M. Vélez)

Uncertainty Analysis of a Torque Estimation Model for Induction Machines (PMAPS ID Number 067)

C. Bastiaensen; W. Deprez; E. Haesen; J. Driesen; R. Belmans
University of Leuven, Leuven, Belgium

Uncertainty Analysis for a Large-Scale Transient Simulation of a Notional All Electric Ship Pulse Load Charging Scenario (PMAPS ID Number 078)

J. Langston¹; M. Steurer¹; T. Baldwin¹; J. Taylor²; F. Hover²; J. Simpson³

¹Center for Advanced Power Systems, Florida State University, Tallahassee, FL, USA;

²Massachusetts Institute of Technology, Cambridge, MA, USA; ³Florida State University, Tallahassee, FL, USA

Validation of Voltage Sags Short Term Measurements Based on Predicted Stochastic Simulation (PMAPS ID Number 064)

J.M. Carvalho Filho¹; R.C. Leborgne²; J.P.G. Abreu³

¹Itajuba Federal University, Brazil; ²Federal University of Rio Grande do Sul, Brazil; ³Itajuba Federal University, Brazil

THURSDAY, May 29 - 8:00 – 9:45

Transmission III (Session Chair: A. Leite da Silva)

High Voltage Transmission Equipment Forced Outage Statistics Including Different Fault Types (PMAPS ID Number 088)

A. Chowdhury¹; IEEE D. O. Koval²; IEEE B. P. Glover³

¹California Independent System Operator, USA; ²University of Alberta, Canada

³IEEE MAPPOR, USA

Application of Probabilistic Method for Switchyard Types Selection in Transmission Networks (PMAPS ID Number 159)

Y.Merkurjevs¹; Z. Krishans²; I. Oleinikova²; A. Mutule²

¹Riga Technical University, Latvia; ²Institute of Physical Energetics, Latvia

Use of Phase Shifting Transformers for Minimising Congestion Risk (PMAPS ID Number 049)

J.Verboomen; G. Papaefthymiou; W.L. Kling; L. van der Sluis

Delft University of Technology, The Netherlands

Low Discrepancy Sequences Based Optimization Algorithm for Tuning PSSs (PMAPS ID Number 129)

A.A.Alabduljabbar¹; prof. J.V.Milanović¹; E.M.Al-Eid²

¹The University of Manchester, Manchester, UK; ²School of Mathematics, The University of Manchester

Distribution III (Session Chair: J. Choi)

Evaluation of Low-Voltage Network Systems Reliability Using Probabilistic Methods (PMAPS ID Number 149)

D. Y. Wang; Y. Ten-Ami; E. A. Chebli

Consolidated Edison Company of New York, Inc.

Reliability Evaluation of Distributions Networks Considering Optimization Models in the Restoration Process (PMAPS ID Number 046)

M. G. da Silva¹; R. B. Prada²; A. Coelho²; A. B. Rodrigues²

¹Federal University of Maranhão, MA, Brazil; ²Catholic University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

Economical Evaluation of Telecontrolled Switches in MV Distribution Networks Using the Costs of Penalty Payments (PMAPS ID Number 023)

V. Dětrich¹; P. Skala a Z. Špaček¹; V. Blažek²

¹EGÚ Brno, a.s., Brno, Czech Republic; ²Brno University of Technology, Brno, Czech Republic

Direct and Indirect Measurement of Residential and Commercial CIC: Preliminary Findings from South African Surveys (PMAPS ID Number 006)

J. Setréus; L. Bertling

Royal Institute of Technology, KTH, Stockholm, Sweden

THURSDAY, May 29 - 8:00 – 9:45

Wind III (Session Chair: A. Ozdemir)

A Markovian Approach to Size a Hybrid Wind-Diesel Stand Alone System (PMAPS ID Number 084)

V. Carpentiero; R. Langella; T. Manco; A. Testa

Seconda Università di Napoli, Dipartimento di Ingegneria dell'Informazione, Italy

Probabilistic Computation of a Wind Farm Power Generation Based on Wind Turbine Dynamic Modeling (PMAPS ID Number 087)

H. Bayem¹; Y. Phulpin¹; P. Dessante¹; J. Bect²

¹Department of Power and Energy Systems in SUPELEC, Paris, France; ²Department of Signal Processing and Electronic Systems in SUPELEC, Paris, France

Reliability Issues of Offshore Wind Farm Topology (PMAPS ID Number 156)

Xu Liu; Syed Islam

Curtin University of Technology, Australia

THURSDAY, May 29 - 10:15 – 12:00

Power System Planning (Session Chair: R. Billinton)

A Joint Deterministic–Probabilistic Approach to Bulk System Reliability Assessment (PMAPS ID Number 022)

R Billinton¹; R Karki¹; H Bao²

¹University of Saskatchewan, Saskatoon, Saskatchewan, Canada; ²ABB Inc., Canada.

A Study on the Relationship Between Probabilistic and Deterministic Reliabilities in Korea (PMAPS ID Number 031)

J. Park¹; S. Jeong¹; J. Choi¹; Y. Yun²; Y. Jung²; J. Cha³; Y. Yoon⁴

¹ERI, Gyeongsang National University, Jinju, GN, Korea; ²Korea Electric Power Research Institute in Korea, Korea; ³Daejin University, Jinju, Gyunggi, Pocheon, Korea; ⁴Seoul national University, Seoul, Korea

Probabilistic Criterion for Expansion and Operation Planning (PMAPS ID Number 012)

J. M. Lima¹; M. Th. Schilling²; E. M. Lourenço³

¹Copel – Cia. Paranaense de Energia, Brazil; ²Universidade Federal Fluminense, Brazil; ³Federal University of Paraná, Brasil

Probabilistic Reliability Evaluation of Korea Power System in Planning Mode (PMAPS ID Number 051)

S. Jeong¹; J. Park¹; J. Choi¹; J. Cha²; Y. Yoon³; H. Choi⁴; D. Jeon⁵

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³Dept. of Electrical Eng., Seoul National University, Seoul, Korea; ⁴Korea Power Exchange in Korea;

⁵Research in Korea Electric Power Research Institute in Korea

THURSDAY, May 29 - 10:15 – 12:00

Transmission – HVDC (Session Chair: L. Orama)

Introduction to the HVDC Technology for Reliable Electrical Power Systems (PMAPS ID Number 066)

J. Setréus; L. Bertling
Royal Institute of Technology, KTH, Stockholm, Sweden

Probabilistic Reliability Planning at British Columbia Transmission Corporation: Method and Project Case (PMAPS ID Number 005)

W. Li; P. Choudhury; J.H. Gurney
Columbia Transmission Corporation, Vancouver, Canada

Availability Assessment of the HVDC Converter Transformer System (PMAPS ID Number 015)

R. Leelaruzzi¹; J. Setréus¹; L. Bertling¹; G. Olguin²
¹Royal Institute of Technology, KTH, Stockholm, Sweden; ²ABB Corporate Research, Västerås, Sweden during the work with this paper, but is now with TRANSELEC S.A. Santiago, Chile.

Maintenance (Session Chair: C. Singh)

Application of Evolutionary and Hybrid Algorithms to Optimize Investments Strategies in Large Power Plants (PMAPS ID Number 001)

B. Sakowicz; G. J. Anders; M. Kamiński; A. Napieralski
Technical University of Lodz in Poland

A Risk-Based Decision Approach for Maintenance Scheduling Strategies for Transmission System Equipment (PMAPS ID Number 137)

S. Natti; M. Kezunovic
Texas A&M University, TX, USA

Markov Processes with Fuzzy Parameters- A Case Study (PMAPS ID Number 100)

H. Ge; S. Asgarpoor
University of Nebraska – Lincoln