IPST ‘99 TECHNICAL PROGRAM

1 NEW TOOLS, NEW TECHNIQUES

NETOMAC - Calculating, Analyzing and Optimizing the Dynamic of Electrical Systems in Time and Frequency Domain
99 IPST 062–A1 B. Kulicke, E. Lerch, O. Ruhle, W. Winter (Germany)

ATPDraw - Graphical Preprocessor to ATP - Windows Version
99 IPST 065–A2 Hans Kr. Hvidalen, L. Prikler, J.L. Hall (Norway)

A Comparison Between Three Tools for Electrical Transient Computations
99 IPST 013–A3 P.H. Schavemaker, A. de Lange, L. van der Sluis (The Netherlands)

Preprocessor for EMTP Power Transformer Models
99 IPST 113–6.1 Juan A Martinez-Velasco, F. Gonsales-Molina, Bruce A. Mork (Spain)

Database of Power System Parameters for Data Validation in EMTP Studies: Overhead Transmission Line Application
99 IPST 087–6.2 M.B. Selak, J.R. Martí, H.W. Dommel (Canada)

Proposal of Circuit Description Language
99 IPST 023–6.3 Taku Noda (Japan)

2 TRANSMISSION LINES

Z-Domain Frequency-Dependent Network Equivalent for Electromagnetic Transient Studies
99 IPST 067–1.1 N. R. Watson, A.M. Gole, G. D. Irwin, O. Nayak (New Zealand)

Frequency-Dependent Low Order Approximation of Transmission Line Parameters
99 IPST 054–1.2 Álécio B. Fernandes, Washington L.A. Neves (Brazil)

Quasi-Modes Three-Phase Transmission Line Model - Comparison with Existing Frequency Dependent Models
99 IPST 103–1.3 M.C. Tavares, J. Pissolato, C.M. Portela (Brazil)

An Examination of a Phase Domain Modeling of Untransposed Transmission Lines
99 IPST 079–1.4 Tomoatsu Ino, Masahiro Sekita, Junji Sawada (Japan)

Transmission Line Models for the Simulation of Interaction Phenomena Between Parallel AC and DC Overhead Lines
99 IPST 002–1.5 B. Gustavsen, G. Irwin, R. Mangelrød, D. Brandt, K. Kent (Norway)

3 SOLUTION METHODS

Computational Methods for EMTP Steady-State Initialization
99 IPST 129–2.1 J.A. Martinez-Velasco (Spain)

Combined Iteration Algorithm for Nonlinear Elements in Electromagnetic Transient Simulation
99 IPST 038–2.2 K. Yamamoto, G. Irwin, O. Nayak, A. Ametani (Canada)

Modeling Power Systems with General Difference Equations - A Systematic Formulation
99 IPST 060–2.3 B.R. Oswald, M.A. Pöller (Germany)

Augmented State-Space Formulation for the Study of Electric Networks Including Distributed-Parameter Transmission Line Models
99 IPST 073–2.4 Leonardo T.G. Lima, Nelson Martins, Sandova Carneiro Jr. (Brazil)

Representation of Electrical Signals by a Series of Exponential Terms
99 IPST 068–2.5 M. Alaoui Ismaili, A. Xémard (France)
4 **Switching Surges**

**Theoretical Formulation of a Transient Recovery Voltage when Clearing a Transformer Secondary Fault**

99 IPST 005–3.1  A. Ametani, N. Kuroda, T. Tanimizu, H. Hasegawa, H. Inaba  (Japan)

**Transient Recovery Voltages When Clearing a Fault in Presence of Series Limitation Reactors**

99 IPST 089–3.2  D. Santos, G. Cabriel  (France)

**Assessing Distribution System Transient Overvoltages due to Capacitor Switching**

99 IPST 029–3.3  D. Daniel Sabin, Thomas E. Grebe, Ashok Sundaram  (USA)

**Vacuum Breaker Induced Overvoltages in Induction Motor Circuits**

99 IPST 075–3.4  Y.S. Yuen, L.A. Snider, D.F. Peelo  (P.R.O.C.)

**Simulation of Commutation Spikes and Measurement of the Voltage Distribution and Interturn Voltages in a Synchronous Generator Due to Rectifier Loads**

99 IPST 009–3.5  A. Kunakorn, J. Hiley, K.S. Smith  (UK)

**Transient Phenomena at Energization and Deenergization of Capacitor Banks**


**A Real Case of Current Chopping Overvoltage**


**Switching Overvoltages on 400 and 750 kV Romanian Transmission Lines**

99 IPST 039–16.2  Liliana Oprea, Corneliu Velicescu  (Romania)

**The Energy Absorption Capacity of Metal Oxide Surge Arresters - An Approach for Switching Surges**

99 IPST 104–16.3  Manual L.B. Martinez, Luiz Cera Zanetta Jr.  (Brazil)

**Overvoltages Limitation in the 400 kV Nord Transilvania Network**

99 IPST 115–16.4  Liana Cipcigan, K. S. Smith, J. Hiley  (Romania)

**Energization of 380-kV Partial Networks for the Purpose of Fast Blackstart after System Collapse**

99 IPST 107–20.1  Mustafa Kizilcay, Stefan Groninger, Martin Losing  (Germany)

**Digital Simulation of the Fault Transient Phenomena on EHV Transmission Lines under Non-Linear High Impedance Arcing Faults**


**Electromagnetic Transient Components Induced by Faults in Different Coupled Transmission Line**

99 IPST 100–20.3  M. Kielbon, P. Sowa  (Poland)

**The Simulation of High Speed Grounding Switches for the Rapid Secondary Arc Extinction on 765 kV Transmission Lines**

99 IPST 017–20.4  C.H. Kim, S.P. Ahn  (Korea)

**Overvoltages During Switching of 400 kV, 220 kV and 110 kV Circuit-Breakers in High Voltage Networks**

99 IPST 022–20.5  Z. Zdravković, P. Vukelja, R. Naumov, M. Vučinić  (Yugoslavia)

**Generator Dynamics Influence on Currents Distribution in Fault Condition**

99 IPST 082–20.6  D. P. Stojanovic, J. Nahman, M. Veselinovic  (Yugoslavia)

5 **New Protection Techniques**

**New SIMULINK Libraries for Modeling Digital Protective Relays and Evaluating Their Performance Under Fault Transients**

99 IPST 033–D2  Bogdan Kasztenny, Mladen Kezunovic  (USA)

**Modeling Fault Conditions for Parallel Series-Compensated Lines**

99 IPST 021–11.1  M.M. Saha, E. Rosolowski, J. Izykowski, B. Kasztenny  (Sweden)
Design and Evaluation of an EMTDC Digital Current Transformer Model
99 IPST 116–11.2 C. Wang, P.A. Crossley, H. Li, A.D. Parker (UK)

An ANN Based Electromagnetic Transients Identification Technique for Power Transformer Systems
99 IPST 122–11.3 P.L. Mao, R.K. Aggarwal, Z.Q. Bo (UK)

Modelling of Distance Relays in EMTP
99 IPST 111–11.4 Trin Saengsuwan (Thailand)

Distribution Network Simulation for Systematic Relay Testing
99 IPST 041–11.5 Rui Dias Jorge, J. L. Pinto de Sá (Portugal)

A GSP Based Fault Location Scheme for Distribution Line Using Wavelet Transform Technique
99 IPST 019–22.1 F. Jiang, Z.Q. Bo, G. Weller, Philip S.M. Chin, M.A.Redfern (Singapore)

Travelling Wave Fault Location for Radial MV Distribution Systems, Theoretical Approach and EMTP Simulations
99 IPST 042–22.2 A. Valenti, G. Huard, P. Johannet, F. Brouaye, P. Bastard (France)

ANN Based Relay Algorithm for the Detection of High Impedence Faults
99 IPST 076–22.3 L.A. Snider, Y.S. Yuen (P.R.O.C.)

A Wavelet Transform Based New Directional Relay Using Transient Current Signals
99 IPST 026–22.4 F. Jiang, Z.Q. Bo, Philip S.M. Chin, G. Weller, M.A. Redfern (Singapore)

6 GENERATORS, MACHINES

The Application of User-Defined Induction Machine Models in EMTP
99 IPST 097–5.1 J. Esztergalyos, D. Kosterev, L. Dubé (USA)

Induction Generator Models in Dynamic Simulation Tools
99 IPST 049–5.2 Hans Knudsen, Vladislav Akhmatov (Denmark)

Description of Electrical Machines with Non-Linear Equivalent-Circuits
99 IPST 121–5.3 Dirk Flockermann (Germany)

ABCdq Model of a 3-Phase Induction Motor for Bus Transfer and Drives
99 IPST 004–5.4 E. Akpinar, E. Ungan (Turkey)

Comparative Analysis of Field and Simulation Experiments on an Asynchronous Motor
99 IPST 110–12.1 K. Wilkosz, M. Sobierajski, W.T. Kwasnicki, M. Reformat (Poland)

Sudden Short Circuits in a Doubly Fed Synchronous Machine (DFSM) with a Cyclo-Converter Feeding the Rotor
99 IPST 031–12.2 K. Rechberger, H. Köfler (Austria)
Investigation of the Transient Behaviour of Three Parallal Connected Synchronous Generators with Large Load Changes and Control of Active and Reactive Power Using EMTP
99 IPST 008–12.3 A.M. Miri, S. Ziegler, M. Merkle (Germany)

Dynamic Modelling of Windmills
99 IPST 048–12.4 Vladislav Akhmatov, Hans Knudsen (Denmark)

The Investigation of a Shaft-Torsional Phenomenon Objecting CGS
99 IPST 034–12.5 Hiroyuki Iki, Masaru Isozaki (Japan)

Analysis of Torsional Torques of Big Turbine-Generator Shafts
99 IPST 058–12.6 D. Stojanovic, D. Petrovic, N. Mitrovic (Yugoslavia)

Transient Behaviour of Two Parallel Connected Flywheel Generators During Pulsed Power Operation
99 IPST 078–14.1 A.M. Miri, V. Landenberger, C. Sihler, B. Streibl (Germany)
7 SHIELDING AND GROUNDING

Mitigation of EMI in High Voltage Substation Environment by use of Wiring Cables with Improved Screening Effectiveness

Calculation of Frequency-Dependent Parameters of Power Cable Arrangements Using Pixel-Shaped Conductor Subdivisions
99 IPST 088–7.2 R.A.Rivas, J.R. Martí (Canada)

Electromagnetic Transients in Large and Complex Grounding Systems
99 IPST 124–7.3 Leonid Grcev, Vesna Arnautovski (Republic of Macedonia)

Modelling of Long Grounding Conductors Using EMTP
99 IPST 093–7.4 M.I. Lorentzou, N.D. Hatzigiariou (Greece)

8 LIGHTNING SURGES, OVERVOLTAGES

Sensitivity Analysis of Induced Overvoltage by Lightning Stroke Near Distribution System Using ATP-EMTP
99 IPST 024–B1 R. Montano, A. Cordero, J. Ramirez, M. M. Lozano (Venezuela)

Lightning Induced Overvoltages on Multiconductor Overhead Lines

Calculation of Lightning-Induced Overvoltages using MODELS
99 IPST 064–B3 Hans Kr. Hvidal (Norway)

Probability Density Function of the Lightning Crest Current at Ground Level - Estimation of the Lightning Strike Incidence on Transmission Line
99 IPST 055–B4 R. Lambert, A. Xémard, G. Fleury, E. Tarasiewicz, A. Morched (France)

Lightning Overvoltages: Statistical Study of a 550-kV Substation
99 IPST 099–10.1 P. Bergin, J.C. Poirot, C. Delaporte, C. Andrieu (France)

Incoming Lightning Surge Analysis Considering Return Stroke Parameters
99 IPST 033–10.2 S.Sekioka, T.Ueda, I.Matsubara, S.Kojima (Japan)

Numerical Evaluation of Lightning Stress on High Voltage Substations
99 IPST 052–10.3 S Pack, Y. Wamser (Austria)

Calculations of Overvoltages in the Generator Electrical Circuit of a Power Station
99 IPST 074–10.4 Ivo Ugleši, Zlatko Maljkovi Lj. Kuterovac (Croatia)

Lightning Protection of Transformers Supplied by Underground Cables
99 IPST 128–10.5 D.O. C. Brasil, P.A. Brunheroto, E.L. Ferrari, J.J.S. Oliveira, C.M.V. Tahan (Brazil)

Computation of Lightning Overvoltages Using Nonuniform, Single-Phase Line Model
99 IPST 095–13.1 M.S. Mamis, M. Koksal (Turkey)

Induced Overvoltage Analysis by Lightning Stroke Near Distribution System TACS-EMTP

Transients in Transformer Windings
99 IPST 090–13.3 Tomas Hasman (Czech Republic)

Development and Application of Surge Measuring System for 550kV Substations
High Voltage Impulse Generator Transient Studies - An Alternative to the Standard Calibration Procedure
99 IPST 108–13.5 E.E. De Castro, M.R. de Moraes, M.L.B. Martinez (Brazil)

Corona on Multiconductor Overhead Lines Illuminated by LEMP

A Study of Phase-Wire Voltage due to Corona Wave-Deformation
99 IPST 006–17.2 A. Ametani, K. Yoshida, S. Sekioka, T. Higuchi, Y. Kato (Japan)

Q-V Characteristics Simulation Through Artificial Neural Networks
99 IPST 112–17.3 A.F. Gomes, H.M. de Barros, S. Carneiro Jr., L.P. Caloba (Brazil)

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99 IPST 011–9.1 K.S. Smith, L. Ran, J. Docherty (UK)

Modeling Ferroresonance in a 230 kV Transformer-Terminated Double-Circuit Transmission Line
99 IPST 059–9.2 D.A.N. Jacobson, L. Martí, R.W. Menzies (Canada)

The Influence of Tap Position on the Magnitude of Transformer Inrush Current
99 IPST 069–9.3 H.S. Bronzeado, J.C. de Oliveira (Brazil)

Three-phase Five-Limb Unified Magnetic Equivalent Circuit Transformer Models for PSCAD V3
99 IPST 028–18.1 W.G. Enright, O. Nayak, N.R. Watson (New Zealand)

A Frequency-Dependent Model for a MV/LV Transformer
99 IPST 098–18.2 Christophe Andrieu, Emmanuel Dauphant, Denis Boss (France)

Tuning of Resonant Modal Transformer Models
99 IPST 015–18.3 M. Condon, D.J. Wilcox (Ireland)

A Transformer Model for Transformer Transfer Voltage Simulations
99 IPST 014–18.4 T. Ueda, T. Funabashi, T. Sugimoto, L. Dube (Japan)

A Novel Approach to Evaluation of Magnetizing Circuit Parameters in Transformers by Using PSPICE
99 IPST 085–18.5 S. Cundeva, L. Petkovska, M. Cundev (Republic of Macedonia)

10 CIRCUIT BREAKER AND ARC MODELS

An Improved Circuit-Breaker Model in MODELS Language for ATP-EMTP Code
99 IPST 053–21.1 Guido Ala, M. Inzerillo (Italy)

A Circuit Breaker Model for Small Inductive Current Interruption
99 IPST 057–21.2 J.M. Prousalidis, N.D. Hatzigiorgiou, B.C. Papadis (Greece)

Method to Determine the Parameters of the Electric ARC from Test Data
99 IPST 003–21.3 Walter F. Giménez, Orlando P. Hevia (Argentina)

Dynamic Phasors in Modeling of Arcing Faults on Overhead Lines
99 IPST 063–21.4 Alex M. Stanković (USA)

11 POWER ELECTRONICS, FACTS, SVC, HVDC

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99 IPST 018–C1 A.R.M. Tenório, J.S. Monteiro, A.N. Vasconcelos (Brazil)

EMTP Simulation of Interface Magnetics and Controls in Multi-Pulse High Power Static Var Compensators
99 IPST 119–C2 G. Joos, A.R. Bakhshai (Canada)
Dynamic Analysis of UPFC Using Transient Simulation
99 IPST 118–C3  R. Caltone, P. Mattavelli, B.M. Han  (Italy)

ATP Simulation of Switching Transients in ASD Systems Including Cable Modeling and Algorithm for Damping Overvoltage Problem
99 IPST 046–15.1 Eduardo Cano Plata, Oscar Trad, Guiseppe Ratta  (Argentina)

Determination of Location of FACTS Devices using Fuzzy Decision Making
99 IPST 094–15.2 Mustafa Bagriyanik, Hasan Dag  (Turkey)

Controller Modelling in Electromagnetic Transient Simulations
99 IPST 105–15.3 N.R. Watson, G.D. Irwin, O. Nayak  (New Zealand)

HVDC Ring Modelling and Simulation - A New State Equation Development Algorithm for Modelling
99 IPST 123–15.4  R. Mienski, T. Siewierski  (Poland)

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99 IPST 077–19.1  M. Barbi, S. Achil, R. Bianchi Lastra, J. Barbero  (Argentina)

Transient Studies of the Static VAR Compensator of San Lorenzo - Paraguay
99 IPST 102–19.2  Alfredo J. M. Szostak, Andrés Ramirez, Manuel L. B. Martinez  (Brazil)

Modelling Static Watt-Var Compensators using ATP
99 IPST 047–19.3  M. Ceraolo  (Italy)

Performance of Static VAR Compensators in Degraded Transmission System Conditions: Dynamic Studies Versus Electromagnetic Transient Studies
99 IPST 051–19.4  M. Correia Lima, Álvaro J.P. Ramos, Francisco. J. de A. Baltar  (Brazil)

A Frequency Domain Model for Evaluating Dynamic Compensator Response
99 IPST 084–19.5  Petrus H. Swart  (South Africa)

Equivalent Circuits of Power Electronic Converters
99 IPST 007–23.1  D. Nelles, C. Tuttas  (Germany)

An Efficient Technique for Determining the Responses of Nonlinear Circuits
99 IPST 045–23.2  S.R. Naidu, W.J. Trindade  (Brazil)

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99 IPST 010–23.3  L. Ran, K.S. Smith  (UK)

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99 IPST 125–23.4  András M. Dán, László Prikler  (Hungary)

Effect Analysis of Thyristor Controlled Ground Fault Current Limiting System for Undergrounded Power Distribution Systems
99 IPST 037–23.5  S. Sugimoto, I. Kouda, H. Arita, J. Kida, Y. Matsui  (Japan)

12 Power Quality, Harmonics, Flicker

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99 IPST 030–4.1  Lee King, Thomas E. Grebe, Siddharth C. Bhatt  (USA)

Transient Analysis of Voltage Dips in MV Distribution Networks
99 IPST 083–4.2  Á. Barone Barone, A. Campoccia, V. Cataliotti, M Inzerillo  (Italy)

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99 IPST 072–4.3  J. Sousa, M.T. Correia de Barros, M. Covas, A. Simoes  (Portugal)

Flicker Transient Phenomena Encountered with Diesel Powered Embedded Generation
99 IPST 091–4.4  M.A. Redfern, D.A. Briggs  (UK)

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99 IPST 130–8.4 S. Nikolovski, L. Józsa M. Kalea (Croatia)

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13 REAL TIME SIMULATORS

Real - Time Simulator ARTEMAC for Enhanced Automated Interactive Testing of Digital Relays
99 IPST 061–D1 E. Lerch, O. Ruhle, W. Winter, B. Kulicke, H.-D. Pannhorst (Germany)

Real-Time Power System Simulator on a PC Cluster
99 IPST 043–D3 Y. Fugimoto, Y. Bin, H. Taoka, H. Tezuka, S. Sumimoto, Y. Ishikawa (Japan)

Real Time, Oscillation Free Network Digital Simulation
99 IPST 032–D4 Jacques Szczupak, Carlos A. Duque (Brazil)

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