

Conference Program

Sunday June 24	14:00 - 17:30	Registration		
	18:00 - 20:00	Welcome Reception		
Monday June 25	07:30 - 16:00	Registration		
	08:30 - 09:00	<i>Salão Dourado</i> OPENING CEREMONY		
	09:00 - 10:10	<i>Salão Dourado</i> Plenary Session A - KEYNOTE ADDRESS		
	10:10 - 10:30	Coffee Break		
	10:30 - 12:10	<i>Salão Dourado</i> Session 01 TRANSMISSION LINE MODELING & CABLES I	<i>Salão E</i> Session 02 TRANSFORMERS, ELECTRICAL MACHINES & DRIVES I	<i>Salão G</i> Session 03 POWER SYSTEMS DYNAMICS & CONTROL
	12:10 - 14:00	Lunch		
	14:00 - 15:40	<i>Salão Dourado</i> Session 04 TRANSMISSION LINE MODELING & CABLES II	<i>Salão E</i> Session 05 TRANSFORMERS, ELECTRICAL MACHINES & DRIVES II	<i>Salão G</i> Session 06 POWER ELECTRONIC APPLICATIONS
	15:40 - 16:00	Coffee Break		
	16:00 - 17:40	<i>Salão Dourado</i> Session 07 REAL TIME SIMULATION SYSTEMS	<i>Salão E</i> Session 08 INRUSH TRANSIENTS, FERRORESONANCE, SSR PHENOMENA I	<i>Salão G</i> Session 09 POWER QUALITY & HARMONICS
Tuesday June 26	08:00 - 16:00	Registration		
	08:30 - 10:10	<i>Salão Dourado</i> Plenary Session B - MODELING & SOLUTION METHODS I		
	10:10 - 10:30	Coffee Break		
	10:30 - 12:10	<i>Salão Dourado</i> Session 10 MODELING & SOLUTION METHODS II	<i>Salão E</i> Session 11 DAMPING OSCILLATIONS & CONTROLLED SWITCHING	<i>Salão G</i> Session 12 SYSTEM PROTECTION & FAULT LOCATION I
	12:10 - 14:00	Lunch		
	14:00 - 15:40	<i>Salão Dourado</i> Session 13 MODELING & SOLUTION METHODS III	<i>Salão E</i> Session 14 SWITCHING OF SHUNT & SERIES DEVICES I	<i>Salão G</i> Session 15 SYSTEM PROTECTION & FAULT LOCATION II
	15:40 - 16:00	Coffee Break		
	16:00 - 17:40	<i>Salão Dourado</i> Session 16 MODELING & SOLUTION METHODS IV	<i>Salão E</i> Session 17 SWITCHING OF SHUNT & SERIES DEVICES II	<i>Salão G</i> Session 18 INRUSH TRANSIENTS, FERRORESONANCE, SSR PHENOMENA II

Wednesday June 27	08:00 - 16:00	Registration		
	08:30 - 10:10	<i>Salão Dourado</i> Plenary Session C - LIGHTNING SURGES & VERY FAST TRANSIENTS I		
	10:10 - 10:30	Coffee Break		
	10:30 - 12:10	<i>Salão Dourado</i> Session 19 LIGHTNING SURGES & VERY FAST TRANSIENTS II	<i>Salão E</i> Session 20 SWITCHING TRANSIENTS	<i>Salão G</i> Session 21 ARTIFICIAL INTELLIGENCE APPLICATIONS
	12:10 - 13:30	Lunch		
	13.30 - 22.00	Social Afternoon Bus tour to Petrópolis with visit to the Imperial Museum - followed by the conference dinner Departure at 13:30 p.m. from the parking lot, Hotel Gloria		
Thursday June 28	09:00 - 12:00	Registration		
	08:50 - 10:10	<i>Salão Dourado</i> Plenary Session D - SIMULATION TOOLS I		
	10:10 - 10:30	Coffee Break		
	10:30 - 12:10	<i>Salão Dourado</i> Session 22 SIMULATION TOOLS II	<i>Salão E</i> Session 23 LIGHTNING SURGES & VERY FAST TRANSIENTS III	
	12:10 - 14:00	Lunch		
	14:00 - 15:00	<i>Salão Dourado</i> CLOSING SESSION		

PLEASE SEE NEXT PAGES FOR SESSIONS SCHEDULE

FOREWORD

It is my great pleasure to welcome all delegates and accompanying persons to Rio de Janeiro and to the IV International Conference on Power Systems Transients, IPST'2001.

IPST'2001 is hosted by the Federal University of Rio de Janeiro. The Technical Committee Chairpersons are Bernd R. Oswald (Germany) and Carlo Alberto Nucci (Italy), thus maintaining the IPST tradition to have the Technical and Local Committees based on different continents to ensure a broad international technical culture. Professors Oswald and Nucci, and the members of the Technical Committee as well, are to be congratulated for their careful and hard work in analyzing more than 240 abstracts that were submitted. The technical program comprises 122 papers that will be presented in 3 plenary and 23 parallel sessions. In order to enhance the future referral value of IPST papers, authors have been requested to send files containing their contributions to the IPST permanent Home Page: <http://www.ipst.org> .

IPST'01 is happening at a specially challenging period for the Electric Power Industry in Brazil. Much against technical advice and common sense, decisions concerning investments in both the transmission and generation capacities in the country were postponed, based solely on short term economic analysis. As a result, the country is facing an acute energy crisis with dire consequences to the economy and to the wellbeing of the population. A similar and perhaps more acute crisis is occurring in California, USA, where once again, short sighted policies have prevailed over technical wisdom. However, the crises in Brazil and California will give power engineers and researchers alike, enhanced opportunities to apply their technical capabilities, to ensure the best possible solutions to the planning and operation of electric power systems. I am sure that the technical work selected for presentation at this IPST'01 contains many important contributions to achieve this goal.

I would like to express the recognition of the Local Organizing Committee to the numerous sponsors of this Conference. I would like to acknowledge the very hard work of the Local Organizing Committee members. It has been a pleasant experience to work with them.

Finally, I would like to thank the IPST Organizing Committee for honoring me to serve as Conference Chairman.

Sandoval Carneiro Junior

IPST'01 Local Organizing Committee Chairperson

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CONFERENCE PROGRAM

Sunday, June 24 2001

- 14:00 - 17:30 Registration
- 18:00 - 20:00 Welcome Reception : Old Rectory Building, Federal University of Rio de Janeiro
Avenida Pasteur, 250, Second Floor, Salão Vermelho
Urca
Buses will depart from the parking lot, Hotel Gloria, at 17:45

Monday, June 25 2001

- 07:30 - 16:00 Registration
- 08:30 - 09:00 **Salão Dourado: OPENING CEREMONY**
Chairpersons: Maria Teresa Correia de Barros, IST- Technical University of Lisbon, Portugal
Hermann W. Dommel, University of British Columbia, Canada
- 09:00 - 10:10 **Salão Dourado: Plenary Session A - KEYNOTE ADDRESSES**
Chairperson: Marcio Drummond, General Director, CEPEL, Brazil

THE ITAIPU BINATIONAL HYDROELECTRIC POWER PLANT: Its Role in the Regional Electric Power System

Altino Ventura Filho, Technical Executive Director, Itaipu Binacional

PLANNING STUDIES IN THE NEW BRAZILIAN ELECTRIC SECTOR ENVIRONMENT

Paulo Cesar Vaz Esmeraldo, Head, Planning Transmission Department, Furnas Centrais Elétricas SA

10:10 - 10:30 Coffee Brake

10:30 - 12:10 **Salão Dourado: Session 01 - TRANSMISSION LINE MODELING & CABLES I**
Chairperson: Maria Teresa Correia de Barros, IST, Technical University of Lisbon, Portugal

Overview of Overhead Line Models and Their Representation in Digital Simulations

Juan A. Martinez-Velasco

Re-Appraisal of Basic Impulse Level (BIL) for 400 KV Underground Cables Using ATP/EMTP

Sarah A. Probert, Yong-Hua Song, Prasanta K. Basak, Clive P. Ferguson

Calculating Earth Impedances for Underground Transmission Cables

Alejandro Uribe, José Luis Naredo, Pablo Moreno, Leonardo Guardado

Influence of Earth Conductivity and Permittivity Frequency Dependence in Electromagnetic Transient Phenomena

M. C. Tavares, C. M. Portela, J. Pissolato Fo.

Researching the Efficiency of Measures for Decreasing the Transient Enclosure Voltage Rise of the Gas Insulated Switchgears

Ivo Uglešić, Srećko Bojić

10:30 - 12:10 **Salão E: Session 02 - TRANSFORMERS, ELECTRICAL MACHINES & DRIVES I**
Chairperson: Bruce Mork, Michigan Technological University, USA

Simplified Modelling of Hysteresis for Power System Transformers Studies

Sérgio Henrique Lopes Cabral

Transformer Leakage Flux Modeling

Thor Henriksen

The Use of TLM Modeling for the Analysis of the Behaviour of Continuous Transformer Windings Under Voltage Surge Incidence

Sérgio Henrique Lopes Cabral, Adroaldo Raizer

Influence of the Representation of the Distribution Transformer Core Configuration on Voltages Developed During Unbalanced Operations

Julietta Vernieri, Beatriz Barbieri, Patricia Arnera

A Wide Frequency Range Model For a MV/LV Core Transformer

Christophe Andrieu

10:30 - 12:10 **Salão G: Session 03 - POWER SYSTEMS DYNAMICS & CONTROL**

Chairperson: A. P. Sakis Meliopoulos , Georgia Institute of Technology, USA

Modeling and Analysis of a 1.7 Mva SMES-Based Sag Protector

Surya Santoso, Robert Zavadil, Mark F. McGranaghan, Thomas E. Grebe, Jeffrey Smith, Carel de Winkel

The influence of the High Power Ratio Non-Linear Loads on the Low Voltage System Operation – Case Studies

Zbigniew Styczynski, Andrzej Bachry

Long-Term Stability of a Combined Cycle Plant and Two Interconnected Oil Platforms

S. Henschel, V. Rygg, T. Lauvdal

Modelling of Unified Power Flow Controller into Power Systems Using P-Spice

D. Menniti, A. Pinnarelli, U. De Martinis, A. Andreotti

The Modulus Optimum (MO) Method Applied to Voltage Regulation Systems: Modeling, Tuning and Implementation

A. J. J. Rezek, C. A. D. Coelho, J. M. E. Vicente, J. A. Cortez, P. R. Laurentino

12:10 - 14:00 Lunch

14:00 - 15:40 **Salão Dourado: Session 04 - TRANSMISSION LINE MODELING & CABLES II**

Chairperson: Aki Ametani, Doshida University, Japan

Analysis of a Transmission Line Models Using an Equivalent Impedance Test Concept

S. Kurokawa, J. Pissolato Filho, M. C. Tavares

Detailed Model of Long Transmission Lines for Modal Analysis of AC Networks

Sergio Gomes Jr., Carlos Portela, Nelson Martins

A New Model of Double Three-Phase Transmission Line Including Frequency Dependence - a Transient Study

J. Prado, J. Pissolato Filho, M. C. Tavares, C. M. Portela

The Effect of the Shunt Conductance on Transmission Line Models

Alécio B. Fernandes, Washington L. A. Neves, Edson G. Costa, Max N. Cavalcanti

Cable Model for Frequency Dependent Modelling of Cable Transmission Systems

T.C. Yu, J.R. Martí

14:00 - 15:40 **Salão E: Session 05 - TRANSFORMERS, ELECTRICAL MACHINES & DRIVES II**

Chairperson: Michel Rioual, EDF, France

On Studying Ship Electric Propulsion Motor Driving Schemes

J. M. Prousalidis, N. D. Hatziargyriou, B. C. Papadias

Fast Transients in the Operation of an Induction Motor with Vacuum Switches

Beatriz Barbieri, Raúl Bianchi Lastra

Analysis of Very Fast Transients in Transformer

Y. Shibuya, S. Fujita, E. Tamaki

Simulating the Effects of Switching Events on Transformers

Hermann W. Dommel, D. Nikolic, M. Selak, P. Vujovic

16:00 - 17:40 **Salão G: Session 09 - POWER QUALITY & HARMONICS**
Chairperson: Massimo Ceraolo, University of Pisa, Italy

Analysis and Operation of STATCOM in Unbalanced Systems

Carlos A. C. Cavaliere, Edson H. Watanabe, Maurício Aredes

Identification of Power Quality Disturbances using the MATLAB Wavelet Transform Toolbox

J. W. Resende, C. Penna

Field Test of a System for Automated Classification of Power Quality Disturbances

H. Englert, J. Stenzel

Power Quality Study of a Commuter Train System

T. M. Lai, W. C. Lo, L.A. Snider

Impact of the Reactive Power Optimization on Harmonic Distortion Level

João A. Moor Neto, Nelson C. de Jesus, Laerte Piezante

Tuesday, June 22 2001

08:00 - 16:00 Registration

08:30 - 10:10 **Salão Dourado: Plenary Session B - MODELING & SOLUTION METHODS I**

Chairperson: Bernd R. Oswald, IEH - University of Hanover, Germany

An Optimum Adoption of Iterative Methods for Nonlinear Simulations on EMTP-Type Simulators

Kazuo Yamamoto, Akihiro Ametani

Network Equivalent for the Analysis of Electromagnetic Transients in Power Systems

M. Abdel-Rahman, A. Semlyen, M.R. Iravani

Current and Voltage Dependent Sources in EMTP-based Programs

Benedito D. Bonatto, Hermann W. Dommel

Discrete Time State Space Analysis of Electrical Networks

Markus A. Pöller

10:10 - 10:30 Coffee Brake

10:30 - 12:10 **Salão Dourado: Session 10 - MODELING & SOLUTION METHODS II**

Chairperson: Lazslo Prikler, Technical University of Budapest, Hungary

Proposing a New Methodology to Optimize the Transient Study of a Transmission System

C. M. Portela, M. C. Tavares

Network Decoupling by Latency Exploitation and Distributed Hardware Architecture

J. R. Martí, F. Moreira, J. Hollman, L. Linares

Metal-Oxide Surge Arrester Model for Fast Transient Simulations

F. Fernandez, R. Diaz

Simulation and Tests on Surge Arresters in High-Voltage Laboratory

R. Diaz, F. Fernandez

Development of Surge Simulation Code Based on Finite Difference Time -Domain (FDTD).

Approximation of Maxwell's Equations

Taku Noda, Shigeru Yokoyama

10:30 - 12:10 **Salão E: Session 11 - DAMPING OSCILLATIONS & CONTROLLED SWITCHING**
Chairperson: Tom Grebe, Electrotek Co., USA

Control of Overvoltages on Hydro-Québec 735-kV Series Compensated System During a Major Electro-mechanical Transient Disturbance

Que Bui-Van, Michel Rousseau

Controlled Switching Based on the Injection Method

C. D. Tsirekis, N. D. Hatziaergyriou, B. C. Papadias

Damping of Interarea Oscillations in Large Interconnected Power Systems

Rolf Witzmann

Assessment of Controlled Switching Closing Operation for No-Load Transformers, depending on Constructive Types and Winding Connections

B. Delfino, F. Fornari, C. Gemme, A. Moratto

10:30 - 12:10 **Salão G: Session 12 - SYSTEM PROTECTION & FAULT LOCATION I**

Chairperson: Brian K. Johnson, University of Idaho, USA

Superconducting Hybrid Fault Current Limiter: Manufacturing, Modelling and Simulations

E. Oyarbide, F. Gil Garcia, L. García-Tabarés, J. L. Peral, J. M. Rodríguez, E. Urretavizcaya,
P. Martinez Cid, X. Granados

Analysis of Fault Location Algorithms for Parallel Transmission Lines With Series Compensation

Saha M. M., Wikström K., Rosolowski E. Izykowski, Dutra R.

Application of Pattern Recognition with Principal Component Analysis for Travelling Wave Protection

Ernesto Vázquez Martínez

Analysis of Fault Location Algorithms with Electromagnetic Transients Program

Carlos Eduardo de Moraes Pereira, Luiz Cera Zanetta Jr

Testing a Protection System Using the RTDSTM Batch Mode Facility

Sérgio do Espírito Santo, Victor Alexandre Belo França, Hélio Hayashi de Almeida

12:10 - 14:00 Lunch

14:00 - 15:40 **Salão Dourado: Session 13 - MODELING & SOLUTION METHODS III**

Chairperson: Hermann W. Dommel, University of British Columbia, Canada

A Backward-Forward Interpolation Technique for a Precise Modeling of Power Electronics in HYPERSIM

Van-Qué Do

A Current-Dependent Grounding Resistance Model Based on Energy Balance in Ionization Zone

Shozo Sekioka, Maria Lorentzou, John Prousalidis

Methodology Utilized in Black-Start Studies on EHV Power Networks

Claudio Saldaña, Graciela Ca Izolari

Sparse Network Equivalent Based on Time-Domain Fitting: Single-Port and Two-port Cases

W. C. Boaventura, A. Semlyen, M. R. Iravani, A. Lopes

Static and Dynamic Reduction of Large Systems

E. Lerch, X. Lei, O. Ruhle

14:00 - 15:40 **Salão E: Session 14 - SWITCHING OF SHUNT & SERIES DEVICES I**

Chairperson: Carlos Portela, Federal University of Rio de Janeiro, Brazil

Transients due to Switching of 400 kV Shunt Reactor

Ivo Uglešić, Viktor Milardić, Sandra Hutter, Miroslav Krepela

Transient Performance of Vacuum-Switched Static VAR Compensators Optimised for Large Inductive Loads

C. Sihler, M. Huart, B. Streibl, D. Hrabal, H. Schmitt, W. Weigand

Transient and Temporary Switching Overvoltages in 230 kV Gravataí Capacitors Banks – Stresses in the Banks, Substation Equipment and Associated System

Paulo César Charles, Cláudio Fonseca, Hélio Pessoa de Oliveira Jr.

Transient Design Studies for the Transmanto Series Compensated Transmission System

Danielle Mc Nabb, Michel Granger, Que Bui Van, Michel Rousseau, Mario Pilot

Application of Three-Phase Vacuum Reclosers for Capacitor Bank Switching

Ljubomir A. Kojovic, Bo S. Southerlin, Walter de Aguiar Campos, Eduardo Nunes e Carvalho, Luiz Henrique Silva Duarte, Magda de Rezende Nascimento, Eleilson Santos Costa, Henrique Burd

14:00 - 15:40 **Salão G: Session 15 SYSTEM PROTECTION & FAULT LOCATION II**

Chairperson: Murari Mohan Saha, ABB Sweden

Behaviour of Current Transformers (CT's) Under Severe Saturation Conditions

Hector O. Pascual, Jorge L. Dampé, José A. Rapallini

Investigation of the False Operation of a 500 kV Digital Directional Comparison Relay during Series Capacitor Reinsertion

D. A. N. Jacobson, A. V. Castro, W. Marusenko

Identification of Parameters for Coupling Capacitor Voltage Transformers

D. Fernandes Jr., W. L. A. Neves, J. C. A. Vasconcelos

Experiences in Setting Protections of Series Capacitor Compensated Lines

O. Trad, G. Ratta, M. Torres

15:40 - 16:00 Coffee Break

16:00 - 17:40 **Salão Dourado: Session 16 MODELING & SOLUTION METHODS IV**

Chairperson: Atef Morched, Interg, Portugal

Fast Initialization for Transient Calculations With Non-Sinusoidal Steady State

Leonardo T. G. Lima, Adam Semlyen, M. R. Iravani

The Calculation of Short Circuit Currents in Overhead Ground Wires Using the EMTP

Marco Polo Pereira, Paulo Cesar Vaz Esmeraldo

Short Circuit Studies Using Electrical Transient Programs – The Impact on the Definition of Old Equipment Withstanding Limits and Related Subjects – An Overview Based on Studies for Tucuruí Switching Substation

Camilo Machado Junior, Nita Fukuoka, Eber Ávila Rose, Airton Violin, Manuel Luís Barreira Martinez

Development of a Phase Domain Interaction Model of AC and DC Parallel Lines

Tomoatsu, Ino

Transients Simulation in Low Voltage Power System

Christophe Andrieu, Jean-Paul Genet

16:00 - 17:40 **Salão E: Session 17 - SWITCHING OF SHUNT & SERIES DEVICES II**

Chairperson: Reza Iravani, University of Toronto, Canada

Analysis of Steady-State and Dynamic Performance of a Static Synchronous Compensator (STATCOM)

Tatiana M L de Assis, Edson H Watanabe, Luiz A S Pilotto

An ATP Simulation of Shunt Capacitor Switching in an Electrical Distribution System

Claudio J. dos Santos, Maria Cristina Tavares, Denis Vinicius Coury

Using Electrical Transient Programs to Define the Equipment Associated to a Series Reactor – A Concept Developed to the New Tucuruí Switching Substation

Camilo Machado Junior, Nita Fukuoka, Eber Ávila Rose, Airton Violin, Carlos Alberto Moura Saraiva, Manuel Luís Barreira Martinez

16:00 - 17:40 **Salão G: Session 18 - INRUSH TRANSIENTS, FERRORESONANCE, SSR PHENOMENA II**

Chairperson: José Luis Naredo, Cinvestav, Mexico

A Simplified System for Subsynchronous Resonance Studies

K. Kabiri, H. W. Dommel, S. Henschel

Modeling Ferroresonance Phenomena in an Underground Distribution System

Surya Santoso, Roger C. Dugan, Thomas E. Grebe

Initiation Time Influence of Voltage Sag on Dispersed Generator Shaft Torque

Toshihisa Funabashi, Hitomi Ootoguro, Takayuki Tanabe, Kaoru Koyanagi, Liana Cipcigan, Ryuichi Yokoyama

Ferroresonance Experience in UK: Simulations and Measurements

Zia Emin, Yu Kwong Tong

Wednesday, June 27 2001

08:00 - 12:10 Registration

08:30 - 10:10 **Salão Dourado: Plenary Session C - LIGHTNING SURGES & VERY FAST TRANSIENTS I**

Chairperson: Carlo Alberto Nucci, University of Bologna, Italy

Simulation of Lightning Overvoltages in Electrical Power Systems

Heino Schmitt, Wilhelm Winter

Analysis and Mitigation of Induced Voltages on Substation Control Cables

P. Sakis Meliopoulos, G. J. Cokkinides, Juliano C. Braz

Non Uniform Line Tower Model For Lightning Transient Studies

José A. Gutiérrez R., Pablo Moreno V., José Luis Naredo V., Leonardo Guardado

Statistical Evaluation of Lightning Performances of Distribution Lines

A. Borghetti, C.A. Nucci, A. M. Paolone

Estimating the Expected Failure Rate of Distribution Type Equipment due to Lightning Induced Overvoltages

R. Lambert, A. Xemard, G. Fleury, R. Tarafi, A. Zeddani

10:10 - 10:30 Coffee Break

10:30 - 12:10 **Salão Dourado: Session 19 - LIGHTNING SURGES & VERY FAST TRANSIENTS II**

Chairperson: A. Miri, University of Karlsruhe, Germany

Modeling of Soil Ionization for Calculation of the Transient Response of Grounding Electrodes

M. I. Lorentzou, N. D. Hatziargyriou, S. Sekioka, B. Papadias

Calculation of Lightning-Induced Voltages With Rusck's Method in EMTP Part I: Comparison with Measurements and Agrawal's Coupling Model

Joaquim P. Silva, Antônio Emílio A. Araújo, José Osvaldo, S. Paulino, Hermann W. Dommel

Calculation of Lightning-Induced Voltages with Rusck's Method in EMTP Part II: Effects of Lightning Parameter Variations

Joaquim P. Silva, Antônio Emílio A. Araújo, José Osvaldo, S. Paulino

Simultaneous Measurements of Lightning Induced Voltages in Three Different Points of an Energized Distribution Line in Colombia

Horacio Torres, Milton Salgado, Ernesto Pérez, Javier Herrera, Carlos Quintana, Daniel Rondón, Danny Avila, Diego González, Camilo Younes, Mauricio Vargas, Johny Montaña, Luis Gallego

A Study of Arrangement of Arresters by a Multiple Flashover Analysis

Toshiaki Ueda, Takamitsu Ito, Hideto Watanabe, Toshihisa Funabashi, Akihiro Ametani

10:30 - 12:10 **Salão E: Session 20 - SWITCHING TRANSIENTS**

Chairperson: Luiz Cera Zanetta, University of São Paulo, Brazil

Breakdown Phenomena of a Vacuum Interrupter after Current Zero

Lionel R. Orama

Overvoltages DUE to Capacitors Bank Switching in a 60kV System

José Manuel R. Baptista, Manuel R. Cordeiro, António S. Machado e Moura

Line-Charging Current Interruption by HV and EHV Circuit Breakers: Standard and Non-Standard Test Requirements as Determined by the Stresses Applied and by Breaker Capability Considerations

Carl-Ejnar Sölver, Sérgio de A. Morais

Breaker Transient Recovery Voltages for the Series Compensated 500 kV Crystal Transmission System

H. Goforth, S. R. Atmuri, A. F. Lee

An Alternative to Reduce Medium-Voltage Circuit Breakers Transient Recovery Voltage Peaks

D. M. Nobre, W. L. A. Neves, B. A. de Souza

10:30 - 12:10 **Salão G: Session 21 - ARTIFICIAL INTELLIGENCE APPLICATIONS**

Chairperson: Luis Marti, Hydro One Networks Inc., Canada

Neural Network Based Monte Carlo Analysis for Estimating the Lightning Performance of Distribution Lines

Juan A. Martinez-Velasco, Francisco González-Molina

A Non-Differentiable Wavelet Algorithm For Transient Analysis

Núbia S.D. Brito, Benemar A. Souza

A Web Based Collection of Transient Analysis Cases

Benoit Bressac, Alain Xémard, Antonin Zvacek, Jean Mahseredjian

Power System Dynamic Stability Assessment Using Fuzzy Artmap Neural Network

Shahram Javadi, Mehdi Ehsan, Naser Sadati

12:10 - 13:30 Lunch

13:30 - 22:00 Social Afternoon: Excursion and Conference Dinner

Thursday, June 28 2001

09:10 - 10:10 **Salão Dourado: Plenary Session D - SIMULATION TOOLS I**

Chairperson: Nikos Hatziargyriou, National Technical University of Athens, Greece

New Software Framework for Automated Analysis of Power System Transients

Mladen Kezunovic, Z. Galijasevic

A Fully Interpolated Controls Library for Electromagnetic Transients Simulation of Power Electronic Systems

A. M. Gole, J. E. Nordstrom

FURNAS TCSC- An Example of Using Different Simulation Tools for Performance Analysis

Guilherme Sarcinelli Luz, Nilo José P. de Macedo, Venilton R. de Oliveira

Integrating Electromagnetic Transient Simulation with Other Design Tools

A. M. Gole, P. Dornchenko, D. Kell, G. D. Irwin

10:10 - 10:30 Coffee Brake

10:30 - 12:10 **Salão Dourado: Session 22 - SIMULATION TOOLS II**
Chairperson: Ani Gole, University of Manitoba, Canada

A Fortran-95 Implementation of EMTP Algorithms

Jean Mahseredjian, Benoit Bressac, Alain Xémard, Pierre-Jean Lagacé, Pierre Lacasse

Multi-format Graphical User Interface for EMTP-Based Programs

Jesús Calviño-Fraga, Benedito Donizeti Bonatto

Simulation of Electromagnetic Transients in Power Systems: A Comparison Between two Modern Simulation Tools

M. Ceraolo, S. Barsali

Development and Testing of a Large Scale Digital Power System Simulator at KEPCO

Tae-Kyun Kim, Yong-Beum Yoon, Jin-Boo Choo, Rick Kuffel, Rudi Wierckx

A Portable and Unified Approach to Control System Simulation

S. Casoria, J. Mahseredjian, R. Roussel, J. Beaudry, G. Sybille

10:30 - 12:10 **Salão E: Session 23 - LIGHTNING SURGES & VERY FAST TRANSIENTS III**
Chairperson: Antonio Emilio Araujo, Federal University of Minas Gerais, Brazil

An Identification Procedure For Return Stroke Characteristics

U. De Martinis, A. Andreotti, L. Verolino, D. Menniti, A. Pinnarelli

Analysis of the Occurrence of a Three-Phase Short- Circuit Due to Lightning on Cemig Extra – High Voltage System

Angélica da Costa Oliveira Rocha

550 kV GIS VFT Simulations as a Support for Transformer Design

P. Rohrbach, J.C. Mendes, M. Lacorte

A New Finite Difference Time Domain Scheme for the Evaluation of Lightning Induced Overvoltage on Multiconductor Overhead Lines

M. Paolone, C. A. Nucci, F. Rachidi

An Empirical Formula for the Surge Impedance of a Grounding Conductor along a Concrete Pole in a Distribution Line

Takashi Mozumi, Naoto Nagaoka, Akihiro Ametani, Shozo Sekioka

12:10 - 14:00 Lunch

14:00-15:00 **Salão Dourado: CLOSING SESSION**

Social Events: Conference excursion and dinner

On Wednesday, June 27 the already traditional IPST afternoon excursion and dinner will take delegates and accompanying persons to the city of Petrópolis.

Petrópolis



This city is situated some 65 km north of Rio in the mountain region where the National Park Serra dos Orgãos is located. The trip follows a scenic route and on arrival a visit will be provided to the Museu Imperial, former summer residence of the Brazilian Imperial family during the 19th century. Depending on timing and, weather permitting, the visit will be extended to the Cristal Palace and to the neogothic Cathedral dedicated to São Pedro de Alcântara.

A Buffet dinner will follow in the Churrascaria Porcão, a traditional barbecue restaurant with fine views to Guanabara Bay and the Sugar

Loaf.

Post-Conference Technical Visit to Itaipu and Iguassu Falls



A trip to Itaipu and the wonderful Iguassu Falls is being planned as an added opportunity for delegates to extend their visit to South America. The Itaipu Binational Company, the Brazilian – Paraguayan venture that has been instituted to manage the construction and operation of the Itaipu Hydroelectric Project, will host the technical visit. The Itaipu Plant is currently the biggest Hydroelectric Generating Station in operation in the world. The visit will tour parts of the plant that are not accessible to the general public, and will include the HVDC Converter Station.

Friday June 29, morning – Departure from Rio de Janeiro to Foz de Iguaçu.

Transfer to Hotel. Visit to Iguassu Falls in the afternoon, Brazilian side.

Saturday 30th June – Technical visit to the plant and converter station.

Sunday 31st June – Free for further visits in the morning. Transfer to airport in the afternoon for return flight to Rio.

All inclusive packages are offered, as well as alternative packages for accommodation or air fare only. Please check at Registration Desk with Blumar agents.

Optional Tourist Programs

Several tourist programs will be made available for participants and accompanying persons through Blumar, the official agency of the conference.

Rio Tourist Board has organized a special Tourist Bus that can be boarded en route and has stops by the main attractions. There are various integrated bus routes and information on each part of the city, is provided in four languages