

**XIX International Conference on  
Electromagnetic Disturbances**

**EMD'2009**

**PROGRAMME**

Białystok, September 23 - 25, 2009

**23 September 2009**

**REGISTRATION OF THE PARTICIPANTS**

9.00 – 10.00

**OPENING**

10.00 – 10.30

**Session 1**

10.45 – 12.00

**Measurements and simulation of disturbances  
Part 1**

**Section chairman - Osamu Fujiwara**

1. A. De Conti, S. Visacro, E. G. Silva:  
**CALCULATION OF TOWER SURGE IMPEDANCE WITH JORDAN'S EQUATIONS**  
Brazil
2. R. Markowska:  
**CURRENT TRAVELLING WAVES IN MODELING OF LIGHTNING STRIKE TO A COMMUNICATION TOWER USING A VOLTAGE SOURCE**  
Poland
3. I. Mori, O. Fujiwara:  
**ESTIMATION OF RISE TIME OF DISCHARGE CURRENT FOR AIR DISCHARGE OF ESD-GUN WITH LOW CHARGE VOLTAGES**  
Japan
4. J. M. Wiater:  
**INFLUENCE OF DIFFERENT LIGHTNING SOURCE MODELS ON CURRENT DISTRIBUTION IN THE HV SUBSTATION**  
Poland
5. T. Maksimowicz, K. Aniserowicz:  
**SIMULATION OF LOOP CURRENTS INDUCED BY LIGHTNING CURRENTS OF DIFFERENT WAVEFORMS**  
Poland

12.00 – 12.40

**Invited lecture**

**Dr Alistair Duffy – Validation of Computational Electromagnetics**

**LUNCH**

12.45 – 13.45

**Session 2**

13.45 – 15.15

**EMD in electronic equipment  
EMD in control and measurement systems**

**Section chairman - Yury Grishin**

1. A. Nikolajew:  
**ELIMINATION OF MODAL POWER DISPERSION IN STEP-INDEX OPTICAL FIBER USING FINITE RESPONSE DIGITAL FILTERS**  
Poland
2. S. Masiokas, M. Kriuglaitė-Jarašiūnienė, V. Pakėnas, K. Otas:  
**DETERMINANTS OF VISIBILITY IN MULTIMEDIA PRESENTATION**  
Lithuania
3. A. Zankiewicz:  
**SUSCEPTIBILITY OF WLAN NETWORK TO ADJACENT-CHANNEL INTERFERENCE IN THE 5GHz U-NII BAND**  
Poland
4. A. Holiczer, Y. Grishin:  
**PHYSICO-CHEMICAL PROCESS PARAMETER ESTIMATION ROBUST WITH RESPECT TO PULSE INTERFERENCES AND NOISE**  
Poland
5. A. Rubanik, S. Hlindzich, S. Kovalev, G. Govor:  
**DESIGN OF SOLID-STATE PULSE MODULATORS FOR POWERFUL VACUUM MICROWAVE DEVICES**  
Belarus
6. S. Lisauskas, R Rinkevičienė, A. Petrovas, V. Batkauskas:  
**INDUCTION MOTOR DRIVE WITH FUZZY CONTROLLER**  
Lithuania

### **Coffee break**

15.15 – 15.30

### **Session 3**

15.30 – 17.00

## **EMD emission and susceptibility**

**Section chairman - Roma Rinkeviciene**

1. P. Marčiulionis, J. A. Virbalis, S. Žebrauskas:  
**COMPUTATION OF DIRECT CURRENT CORONA ION-DRIVEN WIND VELOCITIES**  
Lithuania
2. S. Pačinskis, J. A. Virbalis, S. Žebrauskas:  
**STEADY-STATE CORONA FIELD FINITE-DIFFERENCE COMPUTATION WITH VARYING SIZE RECTANGULAR GRID**  
Lithuania
3. A. C. P. Sartin, C. J. Sant'Anna, F. R. L. Dotto, J. A. C. Ulson, P. R. De Aguiar, R. Thomazella:  
**ELECTROMAGNETIC SUSCEPTIBILITY EVALUATION OF THE METALLIC CABLES USED IN COMMUNICATION, SUPERVISION, AUTOMATION AND CONTROL SYSTEMS THAT ARE INSTALLED AT THE 440kV SUBSTATIONS**  
Brazil
4. A. Baskys, V. Bleizgys, V. Zlosnikas:  
**INVESTIGATION OF THE OVERVOLTAGE IN THE INVERTER CAUSED BY THE MOTOR DECELERATION**  
Lithuania
5. K. Kawamata, S. Minegishi, O. Fujiwara:  
**RELATION BETWEEN THE ELECTRODE SURFACE CONDITION AND RADIATED EM FIELD INTENSITY DUE TO MICRO GAP DISCHARGE AS THE LOW VOLTAGE ESD**  
Japan
6. T. Šimkevičius:  
**INFLUENCE OF THE SHORTED WINDINGS TO THE STARTING TORQUE AND HIGHER HARMONICS OF THE MAGNETIC FLUXES OF THE SINGLE-PHASE INDUCTION MOTOR WITH ASYMMETRICAL STATOR**  
Lithuania
7. K. Konopko:  
**COMPARISON OF DIFFERENT PROBABILITY DENSITY FUNCTION ESTIMATORS FOR SIGNAL DETECTION IN NON-GAUSSIAN NOISE**  
Poland

### **Coffee break**

17.00 – 17.15

## Session 4

17.15 – 18.15

### Sources of electromagnetic disturbances

Section chairman - Zdobysław Flisowski

1. S. Visacro, M. H. Murta Vale, A. M. N. Teixeira:  
**INVESTIGATION OF THE EARLY PHASE OF LIGHTNING CURRENTS AS SOURCE OF ELECTROMAGNETIC DISTURBANCE**  
Brazil
2. G. Masłowski, J. Bajorek, P. Barański:  
**DISTANT ELECTRIC FIELD CAUSED BY CLOUD TO GROUND LIGHTNING**  
Poland
3. K. Maceika:  
**INVESTIGATION RESULTS OF SPRITES AND ELVES**  
Lithuania
4. V. I. Larkina, Yu. Ya. Ruzhin:  
**SOURCES OF NATURAL AND MAN-MADE ELECTROMAGNETIC DISTURBANCES**  
Russia

### Poster session

14.00 – 18.00

1. B. Karaliunas:  
**INFLUENCE OF MECHANICAL FACTORS ON COMMUTATION OF SINGLE - PHASE COMMUTATOR MOTORS AND ON RADIO INTERFERENCES**  
Lithuania
2. R. Katutis, R. Vaikasas, J. A. Virbalis:  
**BATTERY-DRIVEN ELECTROMAGNETIC FLOW METER SIGNAL PROCESSING**  
Lithuania
3. A. Nikołajew:  
**RECEPTION OF MULTIMODE STEP-INDEX OPTICAL FIBER'S OUTPUT SIGNAL USING HAAR' S WAVELETS**  
Poland
4. D. Janczak:  
**A METHOD OF STATE ESTIMATION IN PRESENCE OF INTERFERENCES**  
Poland
5. Y. Grishin:  
**ROBUST DATA PROCESSING IN THE PRESENCE OF PULSE AND MULTIPLICATIVE INTERFERENCES**  
Poland
6. E. Świercz:  
**THE ROBUST TIME-FREQUENCY ALGORITHM FOR SUPPRESSING IMPULSE DISTURBANCES IN RADAR SYSTEMS WITH POLYNOMIAL FREQUENCY LAWS**  
Poland
7. G. Gražulevičius:  
**INVESTIGATION OF THE MAGNETIC FIELDS INDUCED BY COMPACT FLUORESCENT LAMPS APPLYING A PERSONAL COMPUTER**  
Lithuania
8. A. I. Mowete, M. A. K. Adelabu:  
**AN ASSESSMENT OF LIGHTNING AND OTHER ELECTROSTATIC DISTURBANCES ALONG THE COAST OF SOUTH WEST NIGERIA**  
Nigeria
9. R. Markowska, J. M. Wiater:  
**COMBINED CURRENT-POTENTIAL MEASURING METHOD FOR ANALYSIS OF LIGHTNING THREAT IN STRUCTURES EXPOSED TO DIRECT STRIKES**  
Poland

### Banquet

19.30 – 22.00

# 24 September 2007

## Session 5

8.30 – 10.00

### Lightning and overvoltage protection

Section chairman - Carlo Mazzetti

1. E. N. Stefanov, F. C. Ospina, M. Briceño, S. Mangione, A. Gavidia, L. Colina:  
**AUDIT OF LIGHTNING PROTECTION SYSTEMS IN MEDIUM AND HIGH VOLTAGE POWER SUBSTATIONS**  
Bulgaria / Italy / Germany / Venezuela
2. M. A. Omidiora, M. Lehtonen:  
**CONSIDERATION OF LIGHTNING PROTECTION ON MEDIUM VOLTAGE UNDERGROUND CABLES WITH SHIELD WIRE**  
Finland
3. G. Amicucci, F. Fiamingo, G. B. Lo Piparo, B. Kuca, Z. Flisowski, C. Mazzetti:  
**PROTECTION OF ELECTRICAL AND ELECTRONIC SYSTEMS AGAINST SURGES BY AN ISOLATION TRANSFORMER**  
Italy / Poland
4. M. Szczerbiński:  
**LIGHTNING SIDE FLASH FROM THE TREE: ANALYSIS OF THE HAZARD**  
Poland
5. A. W. Sowa:  
**ANALYSIS OF SEPARATION DISTANCES BETWEEN LPS AND DEVICES ON THE BUILDING ROOF**  
Poland
6. R. Markowska:  
**TIME-FREQUENCY DOMAIN ANALYSIS OF OPERATION OF SURGE PROTECTIVE DEVICE IN BUILDING ELECTRICAL INSTALLATION**  
Poland

## Coffee break

10.00 – 10.15

## Session 6

10.15 – 11.30

### Measurements and simulation of disturbances

#### Part 2

Section chairman - Silverio Visacro

1. J. Bajorek, M. Korzeniowski, G. Maslowski, R. Ziemia:  
**APPLICATION OF EMTP-RV CONTROL DEVICES IN SURGE ARRESTER MODELING**  
Poland
2. M. Milewski, A. M. Hussein:  
**EVALUATION OF TALL-STRUCTURE LIGHTNING RETURN-STROKE MODEL USING CN TOWER DATA**  
Canada
3. L. A. Markevicius, A. Morkvenas, S. Gudzius, L. Markevicius:  
**NUMERICAL MODELLING FOR THE RECOGNITION OF THE VERY FAST ELECTROMAGNETIC TRANSIENTS**  
Lithuania
4. A. Katkevicius, S. Staras:  
**SIMULATION OF STRUCTURES CONTAINING PERIODICAL INHOMOGENEITIES**  
Lithuania
5. J. Žvinys, K. Juzenas, R. Kandrotaitė Janutiene, S. Gudžius, V. Česlevičius:  
**MODELLING OF ELECTRIC DISCHARGE EFFECT ON FERRO-CONCRETE**  
Lithuania
6. F. N. Okafor, F. O. Kalunta:  
**MODELLING OF POTENTIAL DISTRIBUTION AT THE BASE OF A LIGHTNING CHANNEL**  
Nigeria

## **Coffee break**

11.30 – 11.45

## **Session 6**

11.45 – 12.30

# **EMD in wire and radio communication EMD in power systems, power quality**

**Section chairman - Giennadij Czawka**

1. G. Czawka:  
**A NEW MULTIPLE AMPLIFIER WITH DIFFERENT MODES OF WORK**  
Poland
2. G. Czawka, M. Nowakowski:  
**ANALYSIS OF RADIO LINK FOR ULTRA-WIDEBAND SYSTEMS BASED ON THE NEW SCATTERING MATRIX**  
Poland
3. T. Deveikis, E. Nevardauskas, R. Stanionienė:  
**BALANCING AND CONTROL ENERGY IN THE POWER SYSTEM WITH DEEP PENETRATION OF WIND ENERGY**  
Lithuania
4. M. Sadowski:  
**BROADBAND PHASE COMMUTATOR FOR ANTENNA ARRAYS**  
Poland

## **Poster session**

09.00 – 12.30

1. G. Czawka, N. Litwińczuk:  
**SOFTWARE FOR COMPUTER SIMULATION OF MULTIPLE BROADBAND AMPLIFIERS**  
Poland
2. M. Kaczmarek:  
**THE INFLUENCE OF THE WINDINGS GEOMETRICAL DIMENSIONS ON INTERACTION OF THE EXTERNAL MAGNETIC FIELD OF FREQUENCY 50 Hz ON ACCURACY OF THE VOLTAGE TRANSFORMERS**  
Poland
3. M. Kaczmarek:  
**THE INFLUENCE OF THE SINUSOIDAL CONDUCTIVE INTERFERENCES ON METROLOGICAL PROPERTIES OF THE VOLTAGE TRANSFORMERS UNDER THE CHANGE OF THEIR OPERATION CONDITIONS**  
Poland
4. W. Sowa, T. Kuczyński:  
**THE INFLUENCE OF METAL SERVICE SYSTEMS ON LIGHTNING CURRENT DISTRIBUTION**  
Poland
5. G. Montvilas, R. V. Pocius:  
**ADAPTATION OF EMF INTENSITY EVALUATION METHODS FOR NEAR VICINITY SITUATION**  
Lithuania
6. R. V. Pocius, G. Montvilas:  
**ESTIMATION OF EXCLUSION ZONE BOUNDARIES IN NEAR VICINITY OF RADIOTECHNICAL OBJECTS**  
Lithuania
7. A. Souli, A. Hellal, S. Saadi:  
**PROGRAMMING EMTP-ATP-PSCAD SOFTWARE FUNCTIONS USING MATLAB FOR POWER SYSTEMS TRANSIENTS ANALYSIS**  
Algeria
8. Do-wan Kim, Min-woo Kim:  
**ELECTRO-MAGNETIC DISCHARGE ANALYSIS IN LCD PANEL**  
Korea
9. N. M'ziou, L. Mokhnache, A. Boubakeur, R. Kattan:  
**HYBRID METHOD FOR THE COMPUTATION OF THE ELECTROMAGNETIC FIELD RADIATED BY LIGHTNING IN THE PRESENCE OF THE TALL TOWER**  
Algeria

## **LUNCH**

12.30 – 13.30

## **Excursion to Białowieża National Park**

14.30 – 22.00

**25 September 2007**

### **Section 8**

9.00 – 11.00

## **Grounding and equipotential bonding Shielding techniques**

**Section chairman - Linas Andronis Markevicius**

1. S. Wojtas, M. Wołoszyk:  
**COMPLEX EVALUATION OF LIGHTNING PROTECTION EARTHINGS USING THE IMPULSE TESTING METHOD**  
Poland
2. M. Łoboda, R. Marciniak:  
**OPERATIONAL RELIABILITY OF EARTHING SYSTEM AS SIGNIFICANT FACTOR DETERMINING THE POWER QUALITY, EMC AND LIGHTNING PROTECTION**  
Poland
3. E. Krishtopova:  
**ELECTROMAGNETIC SHIELDS WITH MOISTURE LOADED NATURAL CARBONACEOUS POWDERY FILLERS**  
Belarus
4. M. Pavlovich:  
**MATERIALS FOR COMBINED SHIELDS FROM ELECTROMAGNETIC RADIATION IN THE OPTICAL RANGE OF WAVELENGTH**  
Belarus
5. N. V. Kolbun, T. A. Pulko, L. M. Lynkou:  
**MICROWAVE RADIATION SHIELDING EFFECTIVENESS OF COMPOSITE LIQUID-CONTAINING MATERIALS IN DEPENDENCE ON HYGROSCOPIC PROPERTIES OF THE COMPOUNDS**  
Belarus
6. A. Rusiecki:  
**MEASUREMENT OF THE SHIELDING EFFECTIVENESS OF SLOTTED ENCLOSURE WITHIN 30-1000 MHz RANGE USING GTEM CELL**  
Poland
7. M. Smetana, T. Strapacova, L. Janousek, K. Capova:  
**EXCITATION METHOD INFLUENCE TO DISTRIBUTION OF ELECTROMAGNETIC FIELD IN EDDY CURRENT EVALUATION OF CONDUCTIVE MATERIALS**  
Slovak Republic
8. A. Kazeka, T. Borbotko, A. Proudnik:  
**MEASUREMENTS OF SHIELDING EFFECTIVENESS OF THE COMPUTER AIDS RADIATION**  
Belarus

### **Coffee break**

11.00 – 11.15

**Section 9**  
11.15 – 12.15  
**Practical problems of EMD protection**

**Section chairman - Juozapas Arvydas Virbalis**

1. J. Morozionkov, J. A. Virbalis:  
**PROTECTION OF TECHNICAL SYSTEMS WORKING IN THE VICINITY OF THE ELECTRIC REACTOR**  
Lithuania
2. J. Kołtątaj:  
**SMART SENSORS UNDER ELECTROMAGNETIC INTERFERENCE INFLUENCES – PRACTICAL APPROACH IN DESIGN AND EVALUATION OF MICROELECTROMECHANICAL SYSTEMS IN THE PRECISION ENGINEERING**  
Poland
3. J. Kołtątaj:  
**CHOOSING ACCELEROMETERS FOR NEW DESIGNS SENSITIVE TO ELECTROMAGNETIC INTERFERENCES**  
Poland
4. W. Walendziuk, E. Tarasow, A. Idzkowski, M. Penhaker:  
**THE WAY OF CLUSTER SIMULATION OF THE ELECTROMAGNETIC FIELD ABSORPTION IN THE 3D ANATOMIC HUMAN HEAD MODEL**  
Poland / Czech Republic

**Poster session**

09.00 – 12.00

1. N. M'ziou, L. Mokhnache, A. Boubakeur, R. Kattan:  
**LIGHTNING – INDUCED VOLTAGES ON OVERHEAD POWER LINES WITH THE USE OF THE HYBRID METHOD: INFLUENCE OF THE SHIELDING WIRE**  
Algeria
2. J. M. Wiater:  
**REMOTE EARTH LOCALIZATION FOR LIGHTNING SURGE CONDITION ON THE HIGH VOLTAGE SUBSTATION**  
Poland
3. L. A. Markevičius, V. Šiožinys:  
**FILTERING TECHNIQUE FOR TRANSIENT PROCESS PRACTICAL MEASUREMENT APPLICATIONS**  
Lithuania
4. H. Allebad, I. Grabar, V. Kizimenko, N. Kolbun:  
**ELECTROMAGNETIC SHIELDING STRUCTURE TO REDUCE THE FREE SPACE REFLECTIVITY OF OBJECTS**  
Belarus
5. L. E. Aciu, P. Ogruțan, G. Nicolae, B. Bouriot:  
**NEW  $SE_{dB}$  MEASUREMENT METHODS FOR CONDUCTIVE MATERIALS**  
Romania
6. Z. Psenakova, W. Walendziuk:  
**CALCULATION OF THE SAR DISTRIBUTION IN HUMAN BODY CAUSED BY THE RADIOFREQUENCY FIELD**  
Slovak Republic / Poland
7. M. Y. Tarnini:  
**NEW SERIES ACTIVE POWER FILTER FOR COMPUTERS LOADS AND SMALL NON-LINEAR LOADS**  
Lebanon
8. R. Deltuva, J. A. Virbalis:  
**DISTURBANCE OF PLANE CAPACITOR ELECTRIC FIELD BY DIELECTRIC ADMIXTURES**  
Lithuania

**CLOSING CEREMONY**

12.15 – 12.30

**LUNCH**

12.30 – 13.30