

TECHNICAL PROGRAMME

SC A1 ROTATING ELECTRICAL MACHINES

PS1: Developments of Rotating Electrical Machines

- A1-101** *A novel technique for refurbished induction motors' efficiency estimation based on no-load tests*
M. AL-BADRI, P. PILLAY
- A1-102** *Performance of high efficiency induction motors with power quality problems*
P. DONOLO, C. PEZZANI, A. BONELLI, A. AOKI, R. NEHLS, G. BOSSIO, G. GARCIA
- A1-103** *Optimization of the ventilation system of a hydrogenerator through laboratory measurements and CFD simulations*
G. MAS, J. COSTANZA
- A1-104** *Reactive power capability test in generators in the Colombian power System*
H.M. SANCHEZ, J. CASTRILLON, I. VELASQUEZ, J. PINILLA
- A1-105** *Models of synchronous generators subject to transient voltage surges*
Á.B. CANÇADO
- A1-106** *Methodology to analyze the dynamic response of three-phase induction motors subjected to voltage sags*
G.B. GIBELLI
- A1-107** *The impact on large generators by harmonic currents caused by rapid control*
Q. LIU, F. CHANG, S. JIAO, Y. WANG, T. ZHANG, W. ZHENG, X. LIANG, X. SUN
- A1-108** *Turbo-generator welded rotor*
H. COLOMBIE, M. THIERRY, R. ROTZINGER, C. PELISSOU, C. TABACCO, V. FERNAGUT
- A1-109** *Design improvements in IGBT based variable frequency drive motors*
A.K. GUPTA, D.K. CHATURVEDI
- A1-110** *Trend for static excitation systems in large thermal generators - User's perspective*
D. DEVATE, K. CHATURVEDI, K. NAGESH
- A1-111** *Effects of the modularity in PMSM synchronous machine behaviour*
M. GARCÍA-GRACIA
- A1-112** *Increased grid performance using synchronous condensers in multi in-feed multi-terminal HVDC system*
M. REBOLINI, G.M. GIANNUZZI, V. IULIANI, F. PALONE, R. ZAOTTINI, S. ZUNINO
- A1-113** *Design and manufacturing of The world's largest 475MVA/460MW adjustable speed generator-motor for pumped storage hydro electric power plant*
T.KUBO, I. OHNO, O. OSADA, H. TOJO, T. SHIOZAKI, T. SUZUMURA, T. WATANABE

PS2: Life Management of Generators

- A1-201** *Recent endwinding vibration problems in air-cooled turbine generators*
J. KAPLER, J. LETAL, M. SASIC, G.C. STONE
- A1-202** *Development of a hydrogenerator prognosis approach*
N. AMYOT, C. HUDON, M. LÉVESQUE, M. BÉLEC, F. BRABANT, C. ST-LOUIS
- A1-203** *End-winding vibration monitoring for hydro-generators*
S. GIROUX, D. BUSSIÈRES, A. TÊTREAUULT
- A1-204** *Improved SVM applied in fault diagnosis on hydropower generating unit*
B. PENG, J. CHENG, J. SHUAI, Y.P. LI, G.Q. CHEN
- A1-205** *Black box for electrical machines*
A. ELEZ, J. ŠTUDIR, J. POLAK
- A1-206** *Rotor faults diagnosis in synchronous generators using pattern recognition*
M. BIET, □A. BACCHUS

A1-207 Innovations in turbogenerator stator rehabilitation at site of installation

A.L. LIVSHITS, K.A. KOBZAR, V.S. SHPATENKO, V.V. KUZMIN

PS3: Rotating Machines for Dispersed Generation

A1-301 Asset modelling challenges in the wind energy sector

D. MCMILLAN, I. DINWOODIE, G. WILSON, A. MAY, G. HAWKER

SC A2 TRANSFORMERS

PS1: Best practices for asset management

A2-101 Use of health index and reliability data for transformer condition assessment and fleet ranking

P. PICHER, J.-F. BOUDREAU, A. MANGA, C. RAJOTTE, C. TARDIF, G. BIZIER, N. DI GAETANO, D. GARON, B. GIRARD, J.-F. HAMEL, S. PROULX

A2-102 Post-mortem analysis of transformer insulating paper and its relationship to the determination of chemical markers

J. JALBERT, M.-C. LESSARD, B. GIRARD

A2-103 Health index as one of the best practice for condition assessment of transformers and substation equipments – Hungarian experience

B. NÉMETH, C.S. VÖRÖS, G. CSÉPES

A2-104 Power transformer management – investment planning considering loss of life of the insulating paper

M.L. MAMANÍ, R. MEDINA, A.A. ROMERO, E. MOMBELLO, G. RATTÁ

A2-105 Pattern recognition techniques for determining the health index of oil-paper insulation of in-service power transformers

T.K. SAHA, H. MA, C. EKANAYAKE, D. MARTIN, D. ALLAN

A2-106 Post-mortem investigation of power transformers – Profiles of moisture and degree of polymerization - Furan concentration in the oil as ageing assessment tool

T. LIEBFRIED, M. JAYA, M. SCHÄFER, M. STACH, N. MAJER, S. VOSS

A2-107 Health Index: the TERNA's practical approach for transformer fleet management

F. SCATIGGIO, V. IULIANI, A. FRAIOLI, M. POMPILI

A2-108 Transformer asset health review, does it really work?

R. HEYWOOD, S. RYDER, P. JARMAN

A2-109 Learning from power transformer forensic investigation and failure analysis

H. DING, R. HEYWOOD, S. RYDER, J. LAPWORTH, R. HOOTON, P. JARMAN, E. CROSS, S. HORSLEY

A2-110 Addressing Ground-Induced Current (GIC) transformer protection

A. RAMIREZ ORQUIN, V. RAMIREZ

A2-111 Interpretation of data from on-line bushing monitoring systems

J. WATSON, J. BUCHACZ, V. PRYKHODKO, S. SKINNER

A2-112 Experiences of transformer damage and recovery from the Great East Japan Earthquake

I. OHNO, T. KOBAYASHI, S. YAMADA, M. KADOWAKI, H. MURAKAMI

A2-113 Application of novel algorithms for continuous bushing and OLTC monitoring for increasing network reliability

N. ABEYWICKRAMA, O. KOUZMINE, S. KORNHUBER, L. CHEIM, P. LORIN, M. GAUVIN, F. LEONARD, P. PICHER

A2-114 Managing an ageing transformer fleet. Norwegian situation, research and initiatives

L. E. LUNDGAARD, C. LESAIN, K. B. LILAND, D. LINHJELL, M.H. G. ESE AND AL

A2-115 Criteria determining the highest permissible operation temperature of an oil transformer when the humidity of the cellulose insulation increases

S.J. SŁOWIKOWSKI

A2-116 Transformer health and risk indexing, including data quality management

M. VERMEER, J. WETZER

PS2: Transformers for specialized applications

A2-201 Short circuit verification for a 570 MVA, 420 kV single-phase GSU-transformer by SC-withstand tests on a mock-up unit

G. LEBER, H. PASSATH, M. RYADI, P. HURLET

A2-202 Phase shifting transformer on power control - A brazilian experience

A.L.N. VITA, G.M. BASTOS, J.C. MENDES, F.C. NETO

A2-203 Research on the insulation reliability for the lead exit of 1000 kV transformer

J. LI, J. SUN, S. ZHANG, R. LIU, H. TANG, H. CHENG, Z. ZHAO, F. GAO, R. GUO

A2-204 Basic research for fibre optic application in HVDC transformer

R. WIMMER, J. HOPPE, A. MIKULECKY, F. JENAU, M. FREIBURG

- A2-205** *Design, testing, commissioning and operational experience of first phase shifting transformer in Indian network*
S.V.N. J. SUNDAR, Y. RAJU A, C. RADHAKRISHNA, M. KUMAR, S. SACHDEVA
- A2-206** *Controlled shunt reactor 500kV 180MVA with new design. Field experience at NELYM substation.*
L. MAKAREVICH, L. MASTRYUKOV, V. IVAKIN, V. KOVALEV, N. SULDIN
- A2-207** *New phase shifting transformers in the Italian transmission network. Design, manufacturing, testing and electromagnetic transients modelling*
M. REBOLINI, V. IULIANI, F. PALONE, S. ZUNINO, M. UBALDINI, S. BADINI, G. CANNAVALE, M. DEL CARRO, L. LOMBINI, G. CAPRIO, A. VITIELLO, P.L. ALBANI, F. FERRARI
- A2-208** *Charge dynamics in oil/pressboard and HVDC converter transformer*
M. HAO, Y. ZHOU, G. CHEN
- A2-209** *Design recommendations arising from experience with offshore transformers*
R. SLAUGHTER, M. BARNETT, A. REISING
- A2-210** *Analysis of 2 core transformer designs*
R. AHUJA, R. DEL VECCHIO
- A2-211** *Variable shunt reactors: applications and system aspects*
C. BENGTTSSON, K. RYEN, O.A. RUI, T. OLSSON
- PS3: Field experience with the use of non-conventional materials and technologies**
- A2-301** *Factory and field experience with monitoring of vegetable oil transformer*
V.G. DAVYDOV, T. ZIELINSKI, L. MCPHERSON
- A2-302** *Ageing phenomena of celluloseoil insulation in natural ester and mineral oil*
C. PERRIER, M-L. COULIBALY, □J. LUKIC, V. MANDI
- A2-303** *HTSC transformers with localized magnetic field*
E.P. VOLKOV, E.A. DZHAFAROV, L.S. FLEISHMAN
- A2-304** *Dry-type subtransmission transformer installations*
M. CARLEN
- A2-305** *CANCELLED - New demands on vacuum interrupters in tap-changer applications*
- A2-306** *Experience with application of natural-ester filled HV transformers in Mexico*
J.G. CASTELLANOS
- A2-307** *Experience with the first 230 kV shell type auto-transformer retro-filled with natural ester on Mexican grid*
R. OCÓN, R. MONTES, R. LIÑÁN, A. GUZMÁN
- A2-308** *Commissioning testing and operational experience with a network connected 1 MVA superconducting transformer utilising 2G HTS Roebel cable*
N.D. GLASSON, M.P. STAINES, N. ALLPRESS, M. DAVIES, K. HAMILTON, G. SIDOROV, M. PANNU

SC A3 HIGH VOLTAGE EQUIPMENT

PS1: Equipment to cater for changing network conditions

- A3-101** *High voltage dry-type air-core shunt reactors*
K. PAPP, M. R. SHARP, D. F. PEELO
- A3-102** *Experiment and simulation research on VFTO in UHV GIS*
W. CHEN, Z. LI, W. LIU, L. WANG, C. LI, B. HAN, X. YAN, H. WANG, H. HU
- A3-103** *Capacitive current switching capability of air-insulated high voltage pantograph disconnectors*
B. RUSEK, C. NEUMANN, J. HAUDE, K. KLEINEKORTE, R.P.P. SMEETS
- A3-104** *Assessment of transient recovery voltage for 1200 kV circuit breaker*
S.K. AGRAWAL, B.N. DE BHOWMICK, S.B.R. RAO, B.N.V.R.C. S. KUMAR, U. SEN, R.S. SHIVAKUMARA ARADHYA, MEERA K.S, S. SANTOSH K. PATRO
- A3-105** *Optimal allocation and assessment of superconducting fault current limiter in an urban meshed 110-kV subtransmission network*
B.J.O. SOUSA, A. PIHKALA, M. LEHTONEN
- A3-106** *New references for HVDC metering*
J. HÄLLSTRÖM, A. BERGMAN, S. DEDEOĞLU, A-P. ELG, E. HOUTZAGER, J. KLÜSS, T. LEHTONEN, W. LUCAS, A. MEREV, J. MEISNER, T. NIEMINEN, E-P. SUOMALAINEN, S. SVENSSON, C. WEBER

- A3-107** *Diagnosis of capacitive voltage transformers in service. New method to determine the accuracy of CVTs while in service, without physical references and with a light portable unit*
U. ZATICA
- A3-108** *Overload line controller: new FACTS series compensation application based on switched series reactors*
I. ROMERO
- A3-109** *Requirements for increasing safety and reliability: new design on current transformers and experience on multiple stress test on composite bushings*
V. IULIANI, A. DI GIULIO, D. FALORNI, A. FRAIOLI, M. SVANBERG, M. GULLO, P. CARDANO, M. DE NIGRIS, G. PIROVANO
- A3-110** *Investigation of LC-resonance driving in disconnecter bus-transfer testing*
A. RITTER
- A3-111** *Dimensions of influence on RC-dividers to the measurement of power quality*
E. SPERLING
- A3-112** *Protection devices and solutions for evolving distribution smart grid*
L. KOJOVIC, K. ARGIROPOULOS
- A3-113** *Interrupter technology for switching shunt reactors evolves as the frequency of switching reveals weaknesses in traditional designs*
J. ROSTRON, N. MCCORD, T. SPEAS, F. THERBY
- A3-114** *Modelling and experimental verification of DC current interruption phenomena and associated test-circuits*
R.P.P. SMEETS, V. KERTÉSZ, A. YANUSHKEVICH
- A3-115** *Modeling of and recommendations for UHV and EHV switching duties*
A. JANSSEN, D. DUFOURNET, H. ITO, U. RIECHERT, H. KAJINO, Y. YAMAGATA, M. KOSAKADA, S. POIRIER, J. FAN, Z. XIANG, P. FERNANDEZ
- PS2: Lifetime management and ageing of T&D equipment**
- A3-201** *Measurements of dielectric breakdown delays between series-connected interrupters of a HV circuit breaker*
S. POIRIER, R. DOCHE, R. PATER, J. POIRIER
- A3-202** *Impact of mechanical operations on minimum-oil circuit breaker reliability*
J.-F. BOUDREAU, R. DOCHE
- A3-203** *Long-term reliability of controlled switching systems: observations from two decades of development and experience*
A. MERCIER, S. DE CARUFEL, P. TAILLEFER
- A3-204** *Qualification process of a GIS 400 kV SF6 high voltage circuit breaker controlled switching solution*
M. WALDRON, F. AÏT-ABDELMALEK, J.-L. RAYON
- A3-205** *Life extension of well-performing air-blast HV and MV circuit-breakers*
A. JANSSEN, M. VAN RIET, R. SMEETS, H. TE PASKE, M. ILLSLEY
- A3-206** *Romanian experience with lifetime management of high voltage equipment*
I. HATEGAN, C. DIACONU, C. MOLDOVEANU, E. MIHALCEA, V. BREZOIANU, S. ZAHARESCU, B. TOADER, A. VASILE, I. IONITA
- PS3: Impact of extreme operating conditions on T&D equipment**
- A3-301** *Stresses not covered by standards and overstresses applied to transmission equipment*
A. CAVALHO
- A3-302** *Vacuum circuit breaker, switching interactions with transformers and mitigation means*
E. DULLNI, J. MEPPPELINK, L. LILJESTRAND
- A3-303** *Comparison of short and long term use of synchronous control versus closing resistor switching methods for capacitor switching*
N. MCCORD, F. THERBY, J. ROSTRON, T. SPEAS
- A3-304** *Study of seismic design and guideline of substation equipment based on the Great East Japan Earthquake*
I. OHNO, T. ITO, T. KOBAYASHI, H. SATO
- A3-305** *Investigation of composite insulators in extreme environments - Heavy snow and severe pollution -*
M. TOYODA, H. MIYAGAWA, H. TAKADA, Y. TAMAKOSHI, J. KIDA, H. KOHYAMA
- A3-306** *Interruption phenomena and testing of very large SF6 generator circuit breakers*
R.P.P. SMEETS, L.H. TE PASKE, S. KUIVENHOVEN, R. THOMAS, V. ROYOT, P. ROBIN-JOUAN, J.M. WILLIEME, F. JACQUIER

SC B1 INSULATED CABLES

PS1: Feedback from newly installed or upgraded underground and submarine AC and DC cable systems

- B1-101** **Application of T-Joints in high voltage underground cables installations**
F.W. SEYBOLD, L.A. MEDAGLIA, I.M. RUIZ
- B1-102** **330kV XLPE cable specific testing protocol requirements**
K. TANG, D. PATON, G. BUCEA, S. MASHIO, Y. MURAMATSU
- B1-103** **Advanced type testing program in order to assure the reliability of new cable systems**
V. BEGHIN, J. BECKER, C. SZCZEPANSKI
- B1-104** **Newly installed underground AC cable systems in Brazil**
C.D. PEIXOTO, J.C.R. LOPES, N.H.G.R. DE LOUREDO, E. KARABOLAD FILHO
- B1-105** **The first HVAC and HVDC grid connection projects for wind power integration in German North Sea: experience, challenge and outlook**
D. ZHANG, V. WERLE, J. JUNG
- B1-106** **Experience of 220 kV cable transmission in urban India**
A. PHADNIS, M. S. RAO, P. KUMAR, K. SHARMA
- B1-107** **Lessons learnt from permitting and consent relevant to AC UGC lines: the 150 kV “ Cagliari Sud – Rumianca ” case**
M. REBOLINI, M. FORTELEONI, L. GUIZZO, V.P. LICCIARDI, A. GUALANO
- B1-108** **Current rating optimisation for offshore wind farm export cables**
J. A. PILGRIM, S. CATMULL, P. L. LEWIN, P. STRATFORD, R. TYREMAN, S.G. SWINGLER
- B1-109** **38kV transition joint between high-pressure fluid-filled and XLPE cables**
A. MAKOVOZ, J. RUTH
- B1-110** **Practical application of +/-250kV DC-XLPE cable for Hokkaido-Honshu HVDC link**
Y. MURATA, C. WATANABE, Y. ITOU, H. SASAKI, S. KATAKAI, M. WATANABE
- B1-111** **Lightning impulse test levels for extruded HVDC cable systems**
J. LUNDQUIST, C. ENGELBRECHT, E. THUNBERG, V. DUBICKAS, H. JANSSON, T. WORZYK
- B1-112** **Impact of QA/QC on the successful commissioning of long 380 kV XLPE cable systems**
S. MEIJER, F.H. DE WILD, G.R. KUIK, J. TER HAAR, R. ROSS, V. WASCHK
- B1-113** **New innovative cable installation methods used for the 500 kV HVDC project, Skagerrak 4 between Denmark and Norway**
B. KLEBO-ESPE, L. BJERKE, U.S. GUDMUNSDOTTIR, T. KVARTS
- B1-114** **Flexibility of natural/forced ventilated tunnel for EHV cable links across urban environment**
S. AL JALLAF, J. GEORGE, L. POPIEL, O. MOREAU, O.J. JARRY
- PS2: Best use of existing T&D cable systems**
- B1-201** **A deeper insight into fault location on long submarine power cables**
M. BAWART, M. MARZINOTTO, G. MAZZANTI
- B1-202** **Diagnostic testing and on-line condition monitoring of cable systems based on partial discharge measurement**
B.T. PHUNG, Z. LIU, T.R. BLACKBURN, G. BURGESS, P. MCMULLAN, H. ZHANG
- B1-203** **Belgian philosophy and experience with temperature monitoring of cable systems by means of distributed temperature sensing techniques and future PD monitoring techniques**
B. HENNUY, P. LEEMANS, B. MAMPAEY, M. BURCEANU, J. VAN SLYCKEN
- B1-204** **Combination of withstand voltage testing by frequency-tuned resonance and partial discharge testing under damped AC for power cables in field**
Y. XU, B. LIU, J. XUE, H. LI, Y. LA
- B1-205** **Experience of partial discharge with IEC type testing and after installation testing for extruded cables**
A. ELFARASKOURY, O. GOUDA, M. MOKHTAR, M. MEHANNA
- B1-206** **Experiences of PD measurements on HV cable systems installed**
F. GARNACHO
- B1-207** **REE's experience in predictive maintenance, based on the monitoring of shield currents in high voltage underground cables.**
M-D. LÓPEZ-MENCHERO
- B1-208** **Pilot project for cable capacity monitoring using optic fibre cables**
E. CHIMI

- B1-209** **US DGA (Dissolved Gas Analysis) experience on high voltage extruded and oil-paper terminations, including their differences**
N. SINGH, S. SINGH, R. REYES, B. CHOMA, M. UZELAC, K. ZHOU, T. ZHAO
- B1-210** **Online travelling wave-based fault location on crossbonded AC cables in underground transmission systems**
C.F. JENSEN, C. L. BAK, U.S. GUDMUNSDOTTIR
- B1-211** **Development and application of compact type on-line PD system at on-site for detecting PD by applying AC withstand voltage in underground power cable**
J.H. BAE, S. AN, J.H. SONG, S.K. LEE, K. JIN, K.J. SEUNG, T. H. KIM, J.S. LEE
- PS3: Insulated cables in the Network of the Future**
- B1-301** **PACA safety network – a prototype for transmission cables in the network**
F. LESUR, P. MIREBEAU, M. MAMMERI, L. BENARD, J. SANTANA
- B1-302** **Specific challenges of the development of submarine cable systems for Mediterranean interconnectors with depths up to 2500 meters**
P. ADAM, E. COLOMBO, C. MARCHANT, J. HUNT
- B1-303** **AmpaCity Project – Advanced superconducting 10 kV system replaces conventional 110 kV cable system in city center**
M. STEMMLE, F. MERSCHEL, M. NOE, A. HOBL, N. LALLOUET
- B1-304** **Qualification of 150 kV cable produced with highly innovative P-LASER technology**
A. BAREGGI, M. ALBERTINI, L. CAIMI, S. CHINOSI, V. CRISCI, S. FRANCHI BONOMI, A. GUALANO, L. GUIZZO, G. PEREGO, G. POZZATI
- B1-305** **Japan's first in-grid operation of a 66 kV - 200 MVA superconducting cable system**
T. MIMURA, S. HONJO, T. MASUDA, A. MACHIDA, T. HARA
- B1-306** **Current depend armour loss in three-core cables; comparison of FEA results and measurements**
M.M. HATLO, J.J. BREMNES
- B1-307** **Water tree ageing of high voltage XLPE cable insulation system under combined dynamic mechanical and AC electrical stress**
E. ILDSTAD, S.M. HELLESØ, S. HVIDSTEN, H. FAREMO, P. EGROT, J-O. BOSTRÖM, S. NILSSON, J.EEK, J. MATAALLANA, H.M. WÖLNEBERG
- B1-308** **Development status of DC XLPE cable in Korea**
T.H. LEE, S. B. LEE, J.H. NAM, Y.H. KIM, S.K. LEE, I.H. LEE, S.I. JEON, Y.J. WON, J.S. KIM, J.H. LEE

SC B2 OVERHEAD LINES

PS1: Minimizing the Impact of new Overhead Lines

- B2-101** **The impact of transition points on overhead line earthing system performance**
D.J. WOODHOUSE, W.J.V. TOCHER
- B2-102** **Risk assessment of a 400 kV overhead line in a heavy industrial environment**
J. HOFFELMAN, L. BOUCHIKI, K. VAN DAM, J. F. GOFFINET, D. DE BIE, S. BRONCKERS
- B2-103** **Induced voltages on near-by pipelines by AC power lines**
M. ABDEL-SALAM, H. ZIEDAN, A.A. HOSSAM-ELDIN
- B2-104** **Application of new technology solutions for minimizing land use for overhead transmission lines – Indian experience**
CHANDRAKANT, A. ANAND, GOPALJI, G. GUPTA, B.S. PANDEY, I.S. JHA
- B2-105** **Conversion of AC multi-circuit lines to AC-DC hybrid lines**
B. SANDER
- B2-106** **Study of worldwide transmission line tower configurations**
F. SCHMUCK
- B2-107** **Development of insulating cross-arms for compact HV lattice tower structures**
S.M. ROWLAND, R. MACLAREN, F. ALLISON, I. COTTON, D. CHAMBERS, C. ZACHARIADES
- B2-108** **Minimizing the environmental impact of cew overhead lines in Japan**
T. SHINOZAKI, H. TAKAMURA, K. KAWABATA, S. ROKUTANDA
- B2-109** **Voltage uprate studies of the Irish 220 kV network to 400 kV operation**
J. DOYLE, M. NORTON, S. MURRY, S. TEMTEM, P. MORAN, D. CHAMBERS, I. COTTON
- B2-110** **Improved wind model to verify the stability of Wintrack braced post insulator sets**
A.J.P. VAN DER WEKKEN, A. VAN DER WAL, H.E. HOEKSTRA
- B2-111** **New design pylons as solution to minimize the impact of new overhead lines**
H. STEGEMAN, G. BOUDEWIJN, H. LUGSCHITZ, K. REICH, S. PAULY, M. KOSTNER, E. CHRISTIANEN, P. SINTNICOLAAS

B2-112 Corona performance of 400 kV bundle conductors and insulator strings

M. BECAN, M. BABUDER, S. VIZINTIN, I. KOBAL

B2-113 Sharing the transmission grid with storks and other birds

J. GOMES-MOTA, F. AZEVEDO, L. CAMPOS PINTO, N.P. SILVA, J. CASACA

B2-114 Overhead line tower's foundation type a impulse grounding resistance

M. VELEDAR, Z. BAJRAMOVIĆ, S. ČARŠIMAMOVIĆ, M. SAVIĆ, O. HADŽIĆ

PS2: Reliability and Design Optimization

B2-201 Optimization and design of the 400 kV double circuit overhead line crossing over the Hoogly River in West-Bengal, India

E. GHANNOUM, G. SRIVASTAVA, R. KUMAR, S. SUNDAR SINHA

B2-202 Derivation and analysis of the relation between conductor sags in inclined and levelled spans based on a known data of the latter

A. HATIBOVIĆ

B2-203 Optimization of HSIL non-conventional 500 kV transmission line

J.F. AMON, C.P.R. GABAGLIA, M.J. IZYCKI, G. TAVARES, R.C.R. MENEZES, A.S. RIGUEIRA, F.C.DART, J.B.G.F. SILVA, L. F. FERREIRA

B2-204 Research and engineering application of power grid large-scale ice-disaster prevention and treatment technology

J-Z. LU, H-X. ZHANG, Z. FANG, B. LI, Z-L. JIANG, W-H. ZHOU, X-J. XU, Y-J. TAN, J. LUO, C. ZHAO, J. GUO

B2-205 New conductor types application for overhead transmission lines design optimization and reliability improvement

L. TIMASHOVA, E. NIKIFOROV, I. NAZAROV, A. MERZLYAKOV, M. ERMOSHINA L. KACHANOVSKAYA, E. KONSTANTINOVA, P. ROMANOV, S. KOLOSOV, V. SHKAPTSOV

B2-206 REE's insulator global maintenance policy

M. ÁNGEL PÉREZ

B2-207 Dynamic assessment of overhead line capacity for integrating renewable energy into the transmission grid

S. FERNÁNDEZ DE SEVILLA, G. GONZALEZ, G. JUBERIAS, L. MARTINEZ, M. ESCRIBANDO, J. IGLESIAS, P. ALBI, U. BURDALO, A. MUNIZ, S. KWIK

B2-208 Integrating enhanced dynamic line rating into the real-time state estimator analysis and operation of a transmission grid increases reliability, system awareness and line capacity

T. GOODWIN, S. AIVALIOTIS, R. MOHR, R. STELMAK

B2-209 Impact of quality of glass cap-and-pin insulators on life cycle costs and proposals for screening tests

K. HALSAN, I. GUTMAN, J. LUNDENGÅRD, L. CARLSHEM, J. VELEK, J. LACHMAN, K. VÄLIMAA

B2-210 Protection of the 400 kV OHL support foundation structure against a disaster caused by the Dunajec River meandering

R. CZYŻ, P. WOJCIECHOWSKI

PS3: Conductors: Installation and Long Term Performance

B2-301 220-kV field study of different high temperature low sag conductors

R. PUFFER, T. FREHN, M.V. FONDERN, J. T. KRAPP, M. RIEDL

B2-302 Creep behaviour of high temperature low sag conductors

G. PIROVANO, F. MAZZARELLA, A. POSATI, A. PICCININ, S. SCARIETTO

B2-303 Phase displacement as a prospective means for right-of-way upgrading

L. BARTHOLD, R. ADAPA, D. WOODFORD

B2-304 Video based defect detection for ground wire of transmission lines

R. ISHINO, Y. YAMATO

B2-305 Limits of allowed ampacity of EHV/UHV overhead lines with ACSR and ACCC conductors, in the specific climatic conditions of the Slovak Republic

J. LAGO, L. PAVLOV, M. SAVČÁK, J. BARNIAK

B2-306 Creep and fatigue into copper microalloys overhead lines conductors

L. RIERA

SC B3 SUBSTATIONS

PS1: Substation Developments to address future needs

B3-101 Software for design optimization and time reduction in substation design, using BIM Technologies, advanced information systems and knowledge management

J. CORREA, J. GARCIA

- B3-102** **Christchurch reactive power controller**
P. WANG, M. HODGES, N. MATHESON, J. PHOON, S. BELL
- B3-103** **Self-healing control technology in smart distribution system and its demonstration project**
S. HUANG, R. CHEN, X. DONG, L. YU, J. WANG, Z. WU
- B3-104** **A new generation of highly integrated smart substation**
P. SUN, Y. CAI, Z. BO, T. BI
- B3-105** **Development of GIS technologies to meet new requirements at 420 kV level and above**
A. FICHEUX G. GAUDART, N. TOQUET, A. BERTINATO, J. B. JOURJON, N. GARBI, D. DEPRES, M. BERNARD, P. VINSON, V. TROUBAT, T. BERTELOOT
- B3-106** **Design optimisation case study with process bus**
H. JACQUES, C. WOOLLEY, G. TREMOUILLE, R. MIGNÉ, T. BUHAGIAR, T. GLAUTHLIN
- B3-107** **Key parameters for the optimization of a Wind Farm: Impact on the offshore substation**
J. YUAN, P. EGROT, F. MARTIN, P. MONJEAN, G. TREMOUILLE, S. SUN
- B3-108** **POWERGRID experience on operation of 765kV transmission system**
R.P SASMAL, S. SEN, R.K.TYAGI, V. SHRIVASTAVA
- B3-109** **Development and operational experience of substation automation system implementation along with 9-2 LE compliant process BUS with conventional CTs and PTs**
V. SHYAMALA, T. SAI KUMAR, A. AGGARWAL, A. BISWAS, KVH RAO, SVN JITHIN SUNDAR
- B3-110** **First "Digital Substation" 110 kV, using the IEC 61850 (-8-1 and-9-2LE) for measurement, protection and control switching devices in Russia**
Y.I. MORZHIN, S.G. POPOV, Y.V. KORZHETSKIY, M.D. ILIN
- B3-111** **Improving resource usage, installation time and operation of GIS**
H.-D. SCHLEMPER
- B3-112** **Limitations, trends and potentials in the design of modern gas-insulated high**
D. GAUTSCHI
- B3-113** **Model based, substation-centric distribution automation**
F. BECKER, E. HEDGES, K. GEISLER
- B3-114** **Practical use of monitoring/diagnostic systems to realize more efficient maintenance, stable electric power supply and optimized refurbishment**
Y. MATSUSHITA, H. CHIDA, S. NOGUCHI, K. SASAMORI
- B3-115** **Selection between indoor or outdoor DC yards**
D. WU, U. ÅSTRÖM, L. AREVALO, R. MONTAÑO, B. JACOBSON
- B3-116** **Low cost and fast deployment distribution substations**
N. KENNEDY, S. MULVEY
- B3-117** **Standardisation of MV substation configurations in HV/MV substations**
E.J. COSTER, D. BOENDER
- B3-118** **115 kV GIS Design criteria considering service continuity**
K. ANANTAVANICH, N. PAENSUWAN, S. PRUNGKHWUNMUANG, W. RUNJANG
- PS2: Life-cycle management of substations**
- B3-201** **Renovation and up-rating of Substations applying new technologies of equipment of High Voltage obtaining greater availability of electric power and compaction of the dimensions of the Substations**
M. KOVALENKO
- B3-202** **Equipotential surfaces and electric fields to substation corona effect definition**
E. BETANCUR, M. SUAREZ
- B3-203** **Managing risk in design and installation of substations**
A. KLEPAC, S. JONES, J. HOWLAND
- B3-204** **CANCELLED - Understanding the paradigm shift regarding risk management of earthed assets**
- B3-205** **New solutions ensuring safe maintenance and high system reliability in AIS substations**
M.M. MAAROUF, N.M. OSMAN
- B3-206** **UHF partial discharge monitoring return of experience installed in 400 kV GIS**
P. PRIEUR, S. DUBOSCQ, J-F. PENNING, A. SAAR, A. GIRODET, J-L. RAYON
- B3-207** **Risk assessment of internal fault in compact substations under □ the aspect of new networkologies**
E. DULLNI, E. HANSEN, A. MÜLLER

- B3-208** **CANCELLED - Integrated substation condition monitoring project for CLP Power Hong Kong**
- B3-209** **Iberdrola emergency plan, design and use experiences**
R. ADOBES GOLFE
- B3-210** **PD monitoring system for HV substations**
F. GARNACHO
- B3-211** **From IEC 61850 based substations with sampled values to billing metering**
J. WIDMER
- B3-212** **Fault location in capacitor banks – how to identify faulty units quickly and restore the bank to service**
S. SAMINENI, C. LABUSCHAGNE, S. CHASE, J. HAWAZ
- B3-213** **Optimized replacement strategy of substations equipment considering risk management**
K. KAWAKITA, T. SHIMADA, Y. MATSUSHITA, K. UEHARA, A. OKADA, H. HAMA
- B3-214** **Life-cycle management of HV substation equipment**
D. KOPEJTKOVA, L. KOCIS, J. KONRAD
- B3-215** **Substation renovations & refurbishments: a comparison of full station redevelopment versus partial station upgrades**
B. WALL, P. DUFF
- B3-216** **Reliability of HV/MV substations with air-isolated and gas-insulated switchgear**
D. PERIĆ, M. TANASKOVIĆ, N. PETROVIĆ
- B3-217** **Management experience on ageing high voltage substation equipment in Thailand**
S. KAEWCHAN, K. PETCHSANTHAD, T. SUWANASRI
- B3-218** **Safety design improvement of grounding system by compression ratio and ground rod layout methods : case study of Metropolitan Electricity Authority's power distribution system**
A. PHAYOMHOM, S. SIRISUMRANNUKUL, T. KASIRAWAT, A. PUTTARACH
- B3-219** **Design experience of substation upgrade project in Qatar**
M.S. LEE, Y.W. LEE, I.Y. CHOI, W.B. LEE, M.S. KIM, J.B. KIM

SC B4 HVDC AND POWER ELECTRONICS

PS1: HVDC Systems and Applications

- B4-101** **Optimizing the electrical design of the Colombia-Panamá interconnection**
A. VILLEGAS, J. JARAMILLO, A. CLERICI, F. RIZZO, G. LAGROTTERIA
- B4-102** **New Zealand HVDC Pole 3 Project - Challenges and novel solutions**
M. ZAVAHIR, D. CRAWSHAY, K. MARTIN, P. HOBY, U. KINDLER, C. BARTZSCH
- B4-103** **Final project planning conception for the first 800 kV HVDC link of Belo Monte**
D.S. CARVALHO JR., D.F. SOUZA, T.C. RIZZOTO, J.A. CARDOSO, A. BIANCO, M.J. XIMENES, O.J. ROTHSTEIN, R. RISTOW, G.S. LUZ, R.M. AZEVEDO, R.B. BROETTO
- B4-104** **Operational experience of Madeira River Project in the Brazilian interconnected power system under initial configuration**
A.P. GUARINI, A.R.M. TENÓRIO, P.E.M. QUINTÃO
- B4-105** **Research work of ± 1100 kV UHVDC technology**
L. ZEHONG, G. LIYING, Y. JUN, Z. JIN, L. LU
- B4-106** **The operation statistics and analysis of HVDC transmission systems in state grid corporation of China 2006-2012**
Y. JIN, Z. LIANG
- B4-107** **TWENTIES: conclusions of a major R&D and demonstration project on offshore DC grids**
A.-M. DENIS, D. CIRIO, C.C. LIU, C. MOREIRA, K. BELL, W. GRIESHABER, J.-P. DUPRAZ
- B4-108** **Special requirements regarding VSC converters for operation of hybrid AC/DC overhead lines**
B. RUSEK, K. VENNEMANN, J. VELASQUEZ, K. KLEINEKORTE, C. HEISING, V. STAUDT
- B4-109** **Design challenges for ± 800 kV, 3000 MW HVDC Champa –Kurukshehra transmission link with Dedicated Metallic Return (DMR) – User's perspective**
P. TYAGI, V. BAGADIA, R. KUMAR, M.M. GOSWAMI, I.S. JHA
- B4-110** **Impact of the implementation of a DC link in a meshed AC network attending to the technology considered, LCC or VSC. Study case: France-Spain Eastern Interconnection**
P. LABRA
- B4-111** **Reliability analysis of design options for off-shore HVDC meshed networks**
C. MACIVER, K.R.W. BELL

- B4-112** *Designing fault tolerant HVDC networks with a limited need for HVDC circuit breaker operation*
C.D. BARKER, R.S. WHITEHOUSE, A.G. ADAMCZYK, M. BODEN
- B4-113** *The first HVDC project in Indonesia: system study and basic design of Java-Sumatra HVDC link"*
T. SAKAI, B. SISWANTO, R. SJAMSUDDIN, Y. MAKINO
- B4-114** *Celilo Pacific DC Intertie Upgrade presentation*
K. ERIKSSON, O. SAKSVIK, T. HOLMGREN, K.A. MITSCH
- B4-115** *Technology Qualification of Offshore HVDC Transmission Systems*
T. LANGELAND, M. JAFAR, Y. YANG, L.M. HYTTEN, E. HILLBERG, A. DERNFALK
- B4-116** *New synthetic test circuit for the operational test of HVDC thyristor valve*
Y.H. CHUNG, J.B. KWON, T.S. JUNG, Y.W. KIM, W.H. SONG, J.H. LEE, S.T. BAEK, B.M. HAN, E.C. NHO
- B4-117** *A survey of the reliability of HVDC systems throughout the world during 2011 - 2012*
M.G. BENNETT, N.S. DHALIWAL, A. LEIRBUKT - ON BEHALF OF STUDY COMMITTEE B4

PS2: FACTS Systems and Applications

- B4-201** *Generic VSC models for project planning studies*
C. KARAWITA, D.H.R. SURIYAARACHCHI, M. MOHADDES, D. KELL, R. OSTASH, T. MAGUIRE
- B4-202** *Smart power line (SPL) experimental research project*
P. COUTURE, J. BROCHU, B. FRANCOEUR, R. MORIN, D.H. NGUYEN, K. SLIMANI, A. TURGEON, P. VAN DYKE
- B4-203** *Dynamic Compensation in Indian Power system – Siting & sizing*
J.I. SHEKHAR, S.Y. KISHORE, G. MANJU
- B4-204** *Factory test and Commissioning test of 450MVA-STATCOM project*
T.MATSUDA, T.SHIMONOSONO, H.HARADA, K.TEMMA, N.MORISHIMA, T.SHIMOMURA
- B4-205** *CANCELLED - Simulation study guideline for performance assessment of HVDC connected WPP_Cigre2014*
- B4-206** *Comparison of field measurements and EMT simulation results on a multi-level STATCOM for grid integration of London Array wind power plant*
J. GLASDAM, L.H. KOCEWIAK, J. HJERRILD, C.L. BAK, L. ZENI
- B4-207** *A novel control method in grid Interconnection of DG based on adaptive pulse voltage source inverter (VSI) and compare with two other control methods for harmonic compensation and power quality improvement*
R. GALANDARY TAZEKANDI, S.M.T. BATHAEE, A.F. DORAFSHAN

PS3: Power Electronic Equipment Developments

- B4-301** *Development and test of a 120 kV direct current circuit breaker*
L. VIOLLEAU, W. GRIESHABER, J.-P. DUPRAZ
- B4-302** *The Bimode Insulated Gate Transistor (BIGT)*
M. RAHIMO
- B4-303** *A low loss mechanical HVDC breaker for HVDC Grid applications*
T. ERIKSSON, M. BACKMAN, S. HALÉN
- B4-304** *hybrid HVDC breaker – A solution for future HVDC system*
R. DERAKHSHANFAR, T.U. JONSSON, U. STEIGER, M. HABERT
- B4-305** *Effects of STATCOMs on power system in Jeju Island*
E.H. KIM, J.S. PARK, J.S. KIM, S.M. YEO, H.J. JUNG, J.Y. CHOI, H.J. YANG, S.C. MOON

SC B5 PROTECTION AND AUTOMATION

PS1: New protection and automation schemes based on enhanced communication possibilities

- B5-101** *Line current differential protection and the age of Ethernet-based wide-area communications*
B. KASZTENNY, B. LE, K. FODERO, V. SKENDZIC
- B5-102** *A new PMU based power swing detector to enhance reliability of distance relay*
H. BENTARZI, A. OUADI, J-C. MAUN
- B5-103** *Transmission network wide area out of step protection*
I. IVANKOVIĆ, A. MARUŠIĆ
- B5-104** *Automatic voltage control of OLTC power transformers between substations*
G. LECI, I.G. KULIS, J. BENOVIC
- B5-105** *A novel heuristic approach for power system controlled separation wide-area-protection applications*
M. TAGELDIN, W. EL-KHATTAM, A.Y. ABDELAZIZ

- B5-106** *Brand new centralized emergency automation in UPS of East and the experience of its exploitation*
P. KATS, L. KOSHCHIEV, A. LISITSYN, M. EDLIN, A. ZHUKOV, P. LEGKOKONETS, E. SATSUK
- B5-107** *Improving relaying for islanding detection*
R. VÉLEZ
- B5-108** *The integral maintenance centre as support, coordination and asset management tool*
J. MUÑOZ FLOREZ, D. DEL SOLO, D. ARRIBAS, D. GARCIA, J. FEIJOO, R. RODRIGUEZ, M.D. LOPEZ MENCHERO, M. LOPEZ, R. GARCIA, J.A. GARCIA
- B5-109** **CANCELLED - Adaptive systems for active control of LV networks**
- B5-110** *Feedback on in-service deployments of the fully digital substation*
S.H. RICHARDS, J. WRIGHT, N. PAVAIYA, D. CHATREFOU, A. PROCOPIOU
- B5-111** *Demonstration and analysis of IP/MPLS communications for delivering power system protection solutions using IEEE C37.94, IEC 61850 Sampled Values, and IEC 61850 GOOSE protocols*
S.M. BLAIR, F. COFFELE, C.D. BOOTH, B. DE VALCK, D. VERHULST
- B5-112** *Principles for practical wide-area backup protection with synchrophasor communications*
E. UDREN
- B5-113** *Practical use challenge of WDM & IP communication technologies for protection systems*
K. KUROI, T. FURUKAWA, K. TOMIZAWA, T. KAGAMI, C. KOMATSU, Y. KAWASAKI, H. OSHIDA
- B5-114** *A new approach on protection of networks with large amounts of RES*
F. BALASIU, GH. MORARU
- B5-115** *Real-time monitoring, control and protection by implementation of the PMUS in North- East of Romanian power grid*
A. MIRON, M. DRAGOMIR, GH. MORARU, I. NEDELICU, S. A. GAL, A. RUSU
- B5-116** *Development of intelligent generator special protection system (iG-SPS) to improve transient stability in Dangjin power plants*
S. SEO, S.J. KIM, Y.H. MOON, H.N. KWON, K.S. KOOK
- PS2: Expectations from stakeholders about IEC 61850**
- B5-201** *Practical approach to the technical specification of IEC 61850 systems*
E. DUFOUR
- B5-202** *IEC 61850 based substation automation systems - Users expectations and stakeholders interactions*
G. HUON, M. JANSSEN, D. MOERS, A. APOSTOLOV, P. LINDBLAD, P. MYRDA, R. DIAS PAULO, R. LIPOSCHAK
- B5-203** *Brazilian utilities experience in acceptance, commissioning and maintenance testing techniques for protection and automation systems based in IEC-61850*
P.H. FLORES, A.T.A. PEREIRA, P.R.A. SOUZA, K. ARRABAL, C.A.M. AVIZ, M.R. BASTOS, L.V.S. PUPPI
- B5-204** *Modernizations of automation systems of hydraulic generating units in Brazil*
M.F. MENDES
- B5-205** *The integrated tool for substation automation system based on IEC61850*
Y. REN, J. DENG, W. WANG, G. HU, F. LI, X. ZHAO, X. SHA, W. QI
- B5-206** *IEC 61850 interoperability at information level - A challenge for all market players*
L. GUISE, G. HUON, P. LHUILLIER, M. HAECKER, L. SCHMITT, C. BRUNNER
- B5-207** *Increasing interoperability by IEC 61850 profiling – requirements and experience from end-user and vendor prospective*
H. ENGLERT, H.-J. HERRMANN, A. LUDWIG, T. BAUER, T. KEIL
- B5-208** *Improving IEC 61850 interoperability and simplifying IED configuration through the standardisation of protection settings*
Q. HONG, S.M. BLAIR, V. CATTERSONI, A. DYŠKO, C.D. BOOTH, T. RAHMAN
- B5-209** *Utility perspectives and challenges on implementing IEC 61850*
P. MYRDA, S. STERNFELD, G. CHASON
- B5-210** *Requirements for IEC 61850 in terms of logical node design and engineering tool compatibility*
T. OTANI, K. KUROI, H. ITO, S. KATAYAMA, T. OHMORI, T. OGIYAMA
- B5-211** *Expectations and specifications of IEC 61850 based- Digital substation automation system used by Statnett*
R. LØKEN, M.W. KRISTIENSEN, S. LOSNEDAL
- B5-212** *IEC 61850 and distribution network utilities perspective: trials, tribulations and experiences from New Zealand*
N.-K.C. NAIR, R.VERSTER, Z. POPOVICH, R. FRANCIS

- B5-213** *IEC61850 experiences and expectations from the renovated substations project in MEA's distribution system substation*
P. JINTAGOSONWIT
- B5-214** *Next step for IEC 61850: a unified power utility automation language why and how*
R. PAULO
- B5-215** *A functionally integrated architecture for online monitoring and real-time diagnostics and management of substation assets as a tool for optimized maintenance management*
R. PAULO, F. MATOS

SC C1 SYSTEM DEVELOPMENT AND ECONOMICS

PS1: Improvement in system and asset performance through application of enhanced Asset Management methodologies

- C1-101** *A method of full-scale comprehensive evaluation on operating efficiency of electric power networks*
Y.W. WU, L.L. SONG, J. YANG, Y.Z. SUN, B.W. ZHOU, T. LITTLER
- C1-102** *Introducing the integrated evaluation procedure of T&D utilities' asset management efficiency*
V. KOLIBABA, A. FILATOV
- C1-103** *ALMACENA Project. Electrochemical Electricity Storage for System Operation*
A. SAINZ
- C1-104** *A framework for asset replacement and investment planning in power distribution networks*
A. JOHNSON, S. STRACHAN
- C1-105** *Asset management methodology for optimization of long term replacement plan of age facilities*
Y. OGAMA, A. MATSUDA, N. FUJIOKA
- C1-106** *Circuit impact measurement in the face of a distribution network reconfiguration for asset management*
R. BORRAYO, Z. JIMÉNEZ, A. GUZMÁN, A. AVALOS, J. CERDA.
- C1-107** *Consideration of transmission protection system response in reliability of electricity supply analysis – case study*
V.V. VADLAMUDI, O. GJERDE, G. KJØLLE
- C1-108** *Improving the cross-border transmission capacity of Polish power system by using phase shifting transformers*
W. LUBICKI, H. KOCOT, R. KORAB, M. PRZYGRÓDZKI, K. ŻMUDA, G. TOMASIK
- C1-109** *Predictive modelling of overhead lines reliability and lifetime*
N. PINHO DA SILVA, J. CASACA, L. CAMPOS PINTO, F. AZEVEDO, J. GOMES-MOTA

PS2: New system solutions and planning techniques

- C1-201** *Flexibility of thermal power generation for RES supply in Germany until 2020*
G. BRAUNER, S. BOFINGER, W. GLAUNSINGER, I. PYC, F. STEINKE, U. SCHWING, W. MAGIN
- C1-202** *FACTS and D-FACTS: The operational flexibility demanded by the transmission expansion planning task with increasing RES*
R.C. PEREZ, G.C. OLIVEIRA, M.V. PEREIRA, D.M. FALCÃO, F. KREIKEBAUM, S.M. RAMSAY
- C1-203** *Smart grid in China: development and practice*
Z. LIU
- C1-204** *A methodology for the development of the Pan-European Electricity Highways System for 2050*
T. ANDERSKI, S. GALANT, G. MIGLIAVACCA, G. SANCHIS
- C1-205** *Grid integration of large scale renewable generation – Initiatives in Indian power system*
I.S. JHA, Y. K. SEHGAL, SUBIR SEN, KASHISH BHAMBHANI
- C1-206** *Considerations in design of an offshore HVDC network*
K.R.W. BELL, C. MACIVER, T. HOUGHTON, D.P. NEDIC, C.A. FEZEU, M. DOQUET
- C1-207** *CANCELLED - Interconnection? Yes, but how?*
- C1-208** *Strategic defense plan for Oman-UAE interconnected power system*
O.H. ABDALLA, A. AL-BUSAIDI, H. AL-HADI, H. AL-RIYAMI
- C1-209** *Renewable energy and storage within GCC Electric Power Grid*
M.E. MAHROUS, A. DE SA
- C1-210** *Development of a VAR planning tool for strategic network planning*
A. MANSOLDO, S. CUNI, R. ZUELLI, M. NORTON, A. BERIZZI, C. BOVO
- C1-211** *A strategic network framework for the development of the Southern African power pool*
K. LEASK, R. MARAIS

- C1-212** *Coordinated power system services from offshore wind power plants connected through HVDC networks*
L. ZENI, J. GLASDAM, T. LUND, P.E. SØRENSEN, A.D. HANSEN, P. KJÆR, B. HESSELBÆK
- C1-213** *The role of innovative grid-impacting technologies towards the development of the future pan-European system: the GridTech project*
A. L'ABBATE, A. ZANI, S. SULAKOV
- PS3: Securing investment in transmission networks with increasing RES**
- C1-301** *Justifying transmission investment with large-scale RES*
G. COBLE-NEAL, D. THOMPSON, D. PANKHURST, D. BONES
- C1-302** *Hydropower technology roadmap – A pathway for doubling hydroelectricity production worldwide by 2050*
A.C.G. MELO, M.E.P. MACEIRA, M.P. ZIMMERMANN, F.R. WOJCICKI, P. FRANKL, C. PHILIBERT
- C1-303** *Opportunities and solutions for the development of a Mediterranean interconnected grid*
H. POULIQUEN, J. KOWAL, P. ADAM, A. RENAUD, A. HAUTOT, P. LAHIRIGOYEN
- C1-304** *Energy transition in Germany and its impact on investment costs at the example of AÜW distribution network*
H. MÜLLER, B. MEYER, R. KOEBERLE, M. FIEDELDEY
- C1-305** *Transforming Desertec vision into quantitative scenarios – simulations and optimisation analysis for a decarbonised EUMENA power system*
A. ILICETO, F. ZICKFELD
- C1-306** *Economic assessment of HVDC grids*
J. ZHU, H. LI, M. CALLAVIK, J. PAN, R. NUQUI
- C1-307** *Interconnection of the electrical system of Crete with the Greek mainland grid: technical feasibility study*
M. KARYSTIANOS, A. KORONIDES, V. NOMIKOS, J. KABOURIS
- C1-308** *New methodology of transmission system planning in Poland based on economic and market approach*
W. LUBICKI, M. PRZYGRÓDZKI, G. TOMASIK
- C1-309** *A spatial framework for strategic investments to enable RE IPP integration*
P.N. GOVENDER, K.P. IJUMBA, C. MUSHWANA
- C1-310** *Transmission investment evaluation in the Chilean electricity market*
J.C. ARANEDA, R. VALPUESTA
- C1-311** *A 100% renewable scenario for Venezuelan Power Generation Sector in 2050 and its costs*
S. BAUTISTA HERMAN

SC C2 SYSTEM OPERATION AND CONTROL

PS1: Managing new challenges in operational planning and real-time operation of Electric Power Systems

- C2-101** *Hierarchical and distributed state estimation for power systems: the Colombia case*
M. ARBOLEDA, N. DUQUE, J. GOMEZ, W. AMADOR, N. ORTIZ, J. ESPINOSA, E. PÉREZ, F. VALENCIA, M. CIFUENTES, M. GIRALDO
- C2-102** *Experience in the application of dynamic transmission line ratings in the Australian and New Zealand power systems*
G. ATHANASIOS, A. PEARD, M. MILLER, C. SCOTT, L. BELL
- C2-103** *Operational experience with dynamic line rating forecast-based solutions to increase usable network transfer capacity*
H.-M. NGUYEN, J.-J. LAMBIN, F. VASSORT, J.-L. LILIE
- C2-104** *Static and dynamic security assessment of large power systems for online and offline applications*
F.R.M. ALVES, S. GOMES JR., A.A. AVELEDA, R. MOTA HENRIQUES, C.L.T. BORGES, G.N. TARANTO, J.A. PASSOS FILHO, D.M. FALCÃO, T.M.L. ASSIS
- C2-105** *French TSO operational voltage management in a volatile electrical environment*
V. HANNETON, G. NÉRIN, T. MARGOTIN, H. LEFEBVRE
- C2-106** *Intraday studies by regional security coordination initiatives*
T. LOXQ, A. DUTOIT
- C2-107** *Voltage stability assessment using advanced models of thermal generation units for the P/V-Analysis*
W.H. WELLSSOW, H. ACKER, S. LOITZ, J. VANZETTA, C. SCHNEIDERS, J. JACOBS, D. CREMER, W. HECKMANN
- C2-108** *Challenges in assessment of transfer capability under a high growth high uncertainty restructured scenario in India*
S.R. NARASIMHAN, PRADEEP REDDY, V.K. AGRAWAL, S.K. SOONEE, P. MUKHOPADHYAY
- C2-109** *Experiences of synchrophasors initiatives in India*
S.K. SOONEE, V.K. AGRAWAL, P.K. AGARWAL, S.R. NARASIMHAN, R.K. PORWA, V. PANDEY

- C2-110** *Stability monitoring and control of generation based on the synchronized measurements in nodes of its connection*
A.G. FISHOV, M.A. SOBOLEVA, A.I. DECHTEREV, V.A. FISHOV, D.V. TUTUNDAEVA
- C2-111** *AGREGA Project*
A. MOLTÓ
- C2-112** *Thermo-mechanical dynamic rating of OHTL: applications to Italian lines*
P. PELACCHI, M. GIUNTOLI, D. POLI
- C2-113** *European TSOs' cooperation for enhanced system security*
R. BAUMANN
- C2-114** *Assessing frequency stability in the GB power system with high wind penetration*
D. INFELD, L. WU
- C2-115** *Analysis of power systems oscillations in WECC system using synchro-phasor technology*
J. BALLANCE, B. BHARGAVA, P. PALAYAM, H. CHEN, J. HIEBERT
- C2-116** *Simulating the smart electric power grid of the 21st century - bridging the gap between protection and planning*
A. GOPALAKRISHNAN, S. AQUILES-PEREZ, D. MACGREGOR, D. COLEMAN, P. MCGUIRE, K. JONES, J. SENTHIL, J. FELTES, G. PIETROW, A. BOSE
- C2-117** *The total solution to phase angle stability, frequency and voltage problems for operating long-distance bulk power transmission system*
S. YOSHIYAMA, K. TAKAFUJI, H. TAGUCHI, K. HARA, Y. KOWADA
- C2-118** *Online security assessment in Mexican power system*
C. TIRADO, S. ROMO
- C2-119** *Dynamic control of voltage and power flow in Qatar transmission system*
H.I. ELSAYED, S. ABU EIDA, S.R. CHAUDHRY, A.A. AL-MAHMOUD
- C2-120** *Challenges in system operations with renewable generations in ADWEA power network*
E. UDDIN, S. AL HARTHI, H. SIDDIQUI
- C2-121** *Real-time system stability analysis and performance monitoring using synchrophasors*
S. MCGUINNESS
- C2-122** *Integration of coordinated Q–V controller for multi machine power plant into secondary voltage control*
D. ARNAUTOVIC, J. DRAGOSAVAC, Z. JANDA, J. MILANOVIC, L. MIHAILOVIC
- C2-123** *The restoration strategies from neighbor countries: simulation studies and actual tests experience*
G. GIANNUZZI, R. ZAOTTINI, F. PALONE, W. SATTINGER, R. NOTTER, M. SALVETTI, G. MATLI
- C2-124** *PMU applications in the Korean power system: Wide-Area Monitoring And Control (WAMAC) system*
S. HAN, Y. KWON, J. SONG, B. KO, J. LEE, S. NAM, T. KIM, Y. AHN, J. SHIN, S. KIM, D. WOO, D. KIM, B. LEE, S. OH, B. PARK
- PS2: Emerging Operational Issues for Transmission and Distribution Interaction**
- C2-201** *Studies on prevention strategy of large wind power outages due to high voltage conditions*
L. YAO, H. ZHAO, Y. CHI, Y. LI, J. WU
- C2-202** *Emergence of demand response mechanisms and integration in operation*
S. CORVÉ, F. GALMICHE
- C2-203** *Next generation distributions system operation taking into account the demands of a transmission system operator*
D. WESTERMANN, S. SCHLEGEL, R. SCHWERDFEGER, S. KOETHE
- C2-204** *Coordination of the settings of Phase-shifting transformers to minimize the cost of generation re-dispatch*
M. BELIVANIS
- C2-205** *An integrated real-time operation system to enable flexible sharing of the management of monitoring-duty and control-execution-permission*
T. KUSANO, T. KOUMI, K. SATO, T. TATEKOJI, M. SHIMADA, H. KUDO
- C2-206** *Coordinated function between transmission and distribution operation systems in the present and its application*
S. KODAMA, T. GOTO, H. TANAKA
- C2-207** *Evolution of the interface between Eskom's Transmission and Distribution Operators.*
T. CAROLIN, C. BILLINGHAM, R. CANDY, D. CHETTY, N. LUKHELE, J. MULLER, W. VAN SCHALWYK
- C2-208** *Implementation of grid forecasting processes at TenneT: from strategic planning to after the fact analyses*
J.B.M. VAN WAES, P.J. VAN DE PLOEG, S.A. DE GRAAFF, S.J.M. BRUIJNS
- C2-209** *Future challenges in the control centre due to distributed generation and renewables*
M. POWER, N. SINGH, M. CREMENESCU ON BEHALF OF WG C2.16

- C2-210** *Probabilistic power system health index model and visualization*
J. CHOI, J. LIM, H. CHOI, J. JOO
- C2-211** *Decision making of bus splitting for reduction fault current level using a novel network reconfiguration algorithm with rerun optimizer*
H.C. SONG, P. N. VOVOS, T.S. KIM, K.W. CHO
- C2-212** *Risk assessment methodology – Running tests at the Portuguese TSO*
N. MACHADO, S. ALMEIDA DE GRAAFF, R. PESTANA

SC C3 SYSTEM ENVIRONMENTAL PERFORMANCE
PS1: Environmental implications of energy storage technologies

- C3-101** *Reservoirs of hydropower plants - The perception of society about the Brazilian Electric Sector storage*
A.L. MUSTAFÁ, A.S. GABRIEL, A.F. SANTOS, L.F.L. VIANNA
- C3-102** *Environmental assessment of Marine Pumped Hydro technology: a case study for Italian Islands*
J. ALTERACH, M.E. GOBBI, R. MARAZZI, M. MEGHELLA, A. NEGRI

PS2: Integrated sustainable approaches for T&D development

- C3-201** *Mitigation strategies for magnetic field on substations with passive methods*
G.T. TARSIA, D. DIAZ, J. IORIO, M. HIGHES, E. SPITTLE, R. WULF
- C3-202** *The study on environmental performance indicators system of grid corporate*
Y. JIN, G. ZHANG, F. ZHANG
- C3-203** *Life cycle assessment and end-of-life management of GIS and AIS*
Y. KIEFFEL, E. LARUELLE, A. SPINOSA, K. STUMPF
- C3-204** *How to build a 400 kV overhead line in accordance with the territory*
P. MONTPELLIER
- C3-205** *RTE sustainable substation experience*
C. PERRIER, M-L. COULIBALY, J. LUKIC, V. MANDIC
- C3-206** *Advanced grid integration of dispersed generation by using Voltage Regulated Distribution Transformers (VRDT) - Experiences from field tests and potentials for minimizing network expansion*
T. SMOLKA, D. DOHNAL, M. SOJER, R. HEILIGER, J. SCHMIESING, T. HUG, F. SUTTER
- C3-207** *Technical and environmental aspects for tunnel design and construction for the electrical interconnexion between France and Spain*
J. ARÉVALO CAMACHO
- C3-208** *Using 3D GeoDesign for planning of new electricity networks in Spain*
F-J. MORENO MARIMBALDO
- C3-209** *Life Cycle Assessment to Support Environmentally Conscious Design of Power System and Apparatuses*
R. TAKAHASHI, H. NODA, T. KOBAYASHI, K. OOHASHI
- C3-210** *Wildlife management of a new overhead line in Africa*
E. DRAGAN, G. GHEORGHITA, A. DRAGOMIR, S. BUEHLER, S. KYEGANWA, D. MARGINEAN
- C3-211** *Life cycle assessment of the high voltage OHL transmission system in Iceland*
H.B. HRÓLFSDÓTTIR, G.M. INGÓLFSDÓTTIR, M. PÁLSSON, I.L. VALSDÓTTIR, I. GUÐMUNDSSON, BJARNASON, G.M. GUÐJÓNSDÓTTIR, H.J. BJARNADÓTTIR
- C3-212** *Ferrite filter development and application for prevention of noise influx into protective relays*
G.J. YANG, M.H. LEE, Y.J. WON

PS3: Acceptance of High Voltage transmission assets near urban areas

- C3-301** *Optimal placement and other measures taken to enhance public acceptance of a 380kV grid extension project from the Belgian inland to the coast*
J. MENTENS, V. DU FOUR, J.F. GOFFINET, B. PELSSERS
- C3-302** *The consequences for the system operation due the reduction of the values of magnetic field requirements caused by transmission lines near urban areas - A study case*
D.M. CORREIA
- C3-303** *Environmental and social impact assessment for the transmission project assigned to wind power development; the main findings*
M.M. AWAD, A. EL-HANAFY, D. HELMI, S. SHIBL
- C3-304** *88 kV Crowthorne – Lulamisa distribution upgrade: human exposure to electric and magnetic fields: anatomical body dosimetry*
K.R. HUBBARD
- C3-305** *Issues in construction project of the 3rd 765 kV transmission line in Korea*
D.I. LEE, S.B. KIM, Y.S. LIM, K.Y. SHIN, Y.H. KIM, B.Y. KIM, B.Y. LEE, S.H. MYUNG

SC C4 SYSTEM TECHNICAL PERFORMANCE**PS1: Power system technical performance in the advent of large deployment of power converter connected generation technologies**

- C4-101** **Flicker assessment and mitigation in wind farms connected to distribution grids**
G. JOOS, M. AMMAR, D. MASCARELLA, P. VENNE, C. ABBEY
- C4-102** **Impact of large wind farms on power quality. First experiences gained in the Argentinian power system**
J.L. AGÜERO, P.E. ISSOURIBEHERE, D.A. ESTEBAN, F. ISSOURIBEHERE, G.A. BARBERA, H.G. MAYER
- C4-103** **Considerations on power quality requirements for integration of renewable sources (photovoltaic and wind power) into the transmission grid**
F. OLIVEIRA, P.F. RIBEIRO, P.M. ALMEIDA
- C4-104** **New challenges caused by the new energy sources in the Brazilian power system**
S.J. N. CISNEIROS, M.J. BOTELHO, D.O.C. BRASIL, F.C. MEDEIROS, M. GROETAERS, A.B. FERNANDES, A.D.R. MEDEIROS, S.L.A. SARDINHA, A. BIANCO
- C4-105** **Aspects to arranging the test conditions under challenging electricity market situation and the AC-DC system performance during the site acceptance tests of Fenno-Skan 1 upgrade and Fenno-Skan bipole controls**
T. RAUHALA, M. LAASONEN, H. NURMINEN, A.-J. NIKKILÄ
- C4-106** **Impact of HVDC grid on AC system stability and operation**
D. CIRIO, E. CIAPESSONI, A. PITTO, A.M. DENIS, L. HE, C. LIU, C. MOREIRA, B. SILVA
- C4-107** **Methods for risk assessment of SSCI stability issues between renewable generation and series compensated transmission systems**
K. ANDOV, D. KIDD, B. MEHRABAN, B. ENGLISH, S. DUTTA, M. NEAL
- C4-108** **Frequency response of the US Eastern interconnection under conditions of high wind generation**
N. MILLER, M. SHAO, S. PAJIC, R. D'AQUILA, K. CLARK
- C4-109** **Short-term fluctuations of PV output in Japan - Evaluation method of fluctuations in case of large-scale integration -**
K. YOSHIMOTO, T. NANAHARA, Y. WAZAWA, M. KUBO, Y. KATAOKA, S. IMAI
- C4-110** **Reliability assessment of generation systems with interconnections of isolated power systems incorporating large wind and photovoltaic plants**
E.N. DIALYNAS, L.G. DAOUTIS, N. BOULAXIS
- C4-111** **Medium-term dynamic studies for a large island power system with high levels of wind**
T. GALLERY, Y. COUGHLAN, C. MCCARTHY, S. GRIMES
- C4-112** **EMC considerations and planning for an offshore HVDC**
F.M. KOERS, H. LANDAU, G.E. TAP, L.E. JUHLIN, O. ANDERSSON, J. SKANSENS
- C4-113** **The impact of wind and solar power generation on Romanian power quality**
C. STANESCU, D. ILISIU, S. GHEORGHE, D. APETREI, P. POSTOLACHE
- C4-114** **Impact of first wind farm in the Kingdom of Thailand on power quality and mitigation solution**
C. MADTHARAD, J. WARMAN
- C4-115** **Guidelines for monitoring power quality in contemporary and future power networks – results from CIGRE/CIREN JWG C4.112**
J.V. MILANOVIC, M.H.J. BOLLEN, N. CUKALEVSKI - ON BEHALF OF CIGRE/CIREN JWG C4.112

PS2: Methods and techniques for the evaluation of lightning performance and insulation coordination

- C4-201** **Evaluation of leader progression model and EGM for analyzing lightning performance of transmission line**
J. HE, X. WANG, R. ZENG
- C4-202** **VFTO simulation and testing for 500 kV and 800 kV GIS disconnectors**
S. SUN, G. TREMOUILLE, G. MARQUEZIN, T. BERTELOOT, P. VINSON, A. GIRAUDET
- C4-203** **High energy line surge arresters to improve reliability and protection against switching surges on a 500 kV transmission line**
P. BUNOV, D. BISWAS, J. HUNT, A.J.F. KERI, R. THALLAM, L. KLINGBEIL
- C4-204** **New technologies of lightning currents registration with high resolution**
A.V. SHURUPOV, A.V. KOZLOV, E.M. BAZELYAN, A.N. CHULKOV
- C4-205** **Protection of power transformers connected to gis against lightning overvoltages**
L. ROUCO

- C4-206** *Principles of insulation coordination and recent activity on reduction of insulation level in Japan*
H. GOSHIMA, K. HIDAKA, J. TAKAMI, T. SAIDA, S. YOSHIIKE, Y. MATSUSHITA
- C4-207** *Effectiveness of line surge arrester application on the 132 kV Kuala Krai – Gua Musang Line*
IRYANI MOHAMED RAWI, MOHD ZAINAL ABIDIN AB KADIR

PS3: Advanced methods, models and tools for the analysis of power system technical performance

- C4-301** *Simulation of voltage collapse caused by GMDs – Problems and solutions*
L. GÉRIN-LAJOIE, J. MAHSEREDJIAN, S. GUILLON, O. SAAD
- C4-302** *Development of advanced GIC analysis tools for the Manitoba Power Grid*
D.A.N. JACOBSON, S. SHELEMY, W. CHANDRASENA, D. BOTELER, R. PIRJOLA
- C4-303** *RTE experiences with the insertion of long EHVAC insulated cables system performance assessment*
Y. VERNAY, S. DESCHANVRES
- C4-304** *Involvement of electric utilities in the development of EMT simulation tools*
S. DENNETIÈRE, S. NGUEFEU, O. SAAD, A. EL-AKOUM, X. LEGRAND, A. XÉMARD, H. MOTOYAMA, J. MAHSEREDJIAN
- C4-305** *Frequency domain studies for the Malta-Sicily interconnector*
F. PALONE, M. REBOLINI, J.P. VASSALLO, S. LAURIA, M. SCHEMBARI
- C4-306** *Modeling and evaluation of geomagnetic storms in the electric power system*
K. PATIL
- C4-307** *Application of geomagnetic disturbance vulnerability assessments using the eskom main transmission system model*
J. TAYLOR, V. SINGHVI, A. TARDITI, M. VAN HARTE
- C4-308** *Harmonic analysis of wind farm clusters using HV-AC underground cables in the Irish transmission network*
M. VAL ESCUDERO, S. MURRAY, J. GING, B. KELLY, M. NORTON,
- C4-309** *Frequency domain analysis of the influence of compensation wires and earthing resistances in mixed overhead/ underground HV transmission lines*
L. WU, M. ACHTERKAMP, J.P.W. DE JONG, P.A.A.F. WOUTERS, W.L. KLING, M. POPOV, E.F. STEENNIS
- C4-310** *Influence of offshore wind farms layout on electrical resonances*
A. HOLDYK, J. HOLBOELL, E. KOLDBY, A. JENSEN

SC C5 ELECTRICITY MARKETS AND REGULATION

PS1: Electricity Market Governance, Market Models and Market Development Objectives

- C5-101** *Multilateral remedial actions and the proposal for the cost sharing among European system operators(TSOs): Lessons learnt from 2503.2013 (case study)*
M. VUKASOVIC, Z. VUJASINOVIC
- C5-102** *Governance, policy development and implementation within the Australian National Electricity Market (NEM)*
T. BAKER, I. ROSE, P. GALL, B. CLARK, R. KORTE
- C5-103** *Market development and generation expansion: required interaction*
X. VIEIRA, M.V. PEREIRA, M. VIEIRA, A. OLIVEIRA, L.A. BARROSO
- C5-104** *Analysis of the Croatian model for settlement of electricity imbalances and its possible improvement*
I. ŠTRITOF, M. SKOK
- C5-105** *CANCELLED - Regulatory framework for attracting investment in the electric power sector: case study - Egypt*
- C5-106** *Implementation of point of connection tariff in India*
S.K. SOONEE, V. AGRAWAL, S.S. BARPANDA, M. JOSHI, V. BHARDWAJ
- C5-107** *Governance of European day-ahead and intra-day market coupling*
M. LEHTONEN, A. CLAXTON, A. LOPEZ NICOLAS, S. KAISER, M. SUPPONEN
- C5-108** *Convergence of prices and efficiency of day-ahead markets*
B. RAJARAMAN, B. VESOVIC
- C5-109** *Japanese market reform with inter-regional operation, complete retail liberalization and unbundling of the transmission and distribution sector*
H. OKAMOTO, H. ASANO, A. YOKOYAMA
- C5-110** *Competition and regulation in the Mexican power market*
E. ARRIOLA

PS2: Interaction between changing demand and energy usage profiles on market design and operation

- C5-201** **Falling demand - a paradigm shift for the Australian national electricity market**
D. BOWKER, A. CRUICKSHANK, R. DUDLEY, J. EGGLESTON, V. FRANCISCO, G. MULHERIN, D. SWIFT
- C5-202** **Demand-side management programs for industrial sector - Case study: energy saving in Petroleum Pipeline Co.**
F. BENDARY, H.M. MAHMOUD, A.S. AHMED
- C5-203** **Development of stock exchange prices – Consequences for innovative electricity tariffs in the German residential market**
A. GERBLINGER, M. FINKEL, R. WITZMANN, C. WIESER
- C5-204** **PERFILA Project**
A. MOLTÓ
- C5-205** **Facilitating demand side response in the single electricity market**
N. DELANEY, D. STEVENS, S. POWER
- C5-206** **The efficiency of pricing mechanism on tariff structure in Thailand**
R. TEETONG
- C5-207** **Realization of demand response resources using enabling technologies and the improvement of CBL in the Korean electricity market**
K.-W. CHO, L.-H. JEONG, H.-J. YOON

PS3: Integrating renewable resources from the perspective of the electricity market

- C5-301** **Storage as a catalyst for increasing the technical and economic value of electricity generation and networks**
G. THORPE, N. ERTUGRUL
- C5-302** **Challenges and measures to integrate wind generation in both Brazilian power system and electricity market**
S.J.N. CISNEIROS, F.M.C. FERREIRA, D.N. SILVA
- C5-303** **Lessons learned from the auction-based approach to integrate wind generation in the Brazilian electricity market**
G. CUNHA, L.A. BARROSO, B. BEZERRA
- C5-304** **Research on HPWS power control strategies and market mechanism**
R. SUN, G. SHI, S.MA, J. LIANG
- C5-305** **Performance study of deregulated power system networks supported by renewable energy resources**
M.M. ABOUELSAAD, A.F. BENDARY, M.H. ZAKI ABD EL-MAKSOUH
- C5-306** **Market integration and storage resources optimization to mitigate the risks of “over generation” from not programmable RES: the Italian prospective**
A. VENTURINI, E. ELIA, P. PORTOGHESE, G. SOMMANTICO, B. COVA, M. CABANO
- C5-307** **A forward capacity market as a necessary condition for integrating renewable resources**
P. SOTKIEWICZ, G. HELM, M. ABDUR-RAHMAN
- C5-308** **Market evolution for res integration in the US and Europe**
J. SMITH, M. AHLSTROM, J. DUMAS, P. ERIKSEN, J. O’SULLIVAN, P. SOTKIEWICZ
- C5-309** **Impacts of variable renewable energy source integration into a power system operation and implications to the Japan’s future power market**
K. OGIMOTO, Y. UDAGAWA, T. IKEGAMI, K. FURUSAWA, H. ASANO
- C5-310** **Wind power grid integration and cross-border export in Mexico**
M.A. AVILA ROSALES

SC C6 DISTRIBUTION SYSTEMS AND DISPERSED GENERATION

PS1: Design of distribution networks with high penetration of DER and new loads

- C6-101** **Real-time microgrid control validation on the Hydro-Québec distribution test line**
M. ROSS, C. ABBEY, Y. BRISSETTE, G. JOOS
- C6-102** **Maximizing local renewable energy consumption by shifting flexible electrical loads in time and space**
S. ÜBERMASSER, T. LEBER, M. STIFTER, F. LEIMGRUBER, M. MEISEL
- C6-103** **DERri common reference model for distributed energy resources – Modelling schemes, reference implementations and validation of results**
F. ANDRÉN, F. LEHFUSS, P. JONKE, T. STRASSER, E. RIKOS, P. KOTSAMPOPOULOS, P. MOUTIS, F. BELLONI, C. SANDRONI, C. TORNELLI, A. VILLA, A. KRUSTEVA, R. STANEV
- C6-104** **Performance analysis of electric distribution systems with distributed generation resources**
M.M. ABOU EL SAAD, A.H. YOUNES, F. M. BENDARY, A.S. HASSAN ALI

- C6-105** *Impact of node specific load growth and microgrids on distribution network planning*
R. J. MILLAR, E. SAARIJÄRVI, M. LEHTONEN, M. DEGEFA, M. KOIVISTO
- C6-106** *Features of small dispersed CHP integration into the power system*
YU.N. KUCHEROV, D.N. YAROSH, YU.G. FEDOROV, YU.A. ZEYGARNIK, A.Z. ZHUK, S.A. NEKRASOV, P.V. ILYUSHIN, S.P. FILIPPOV, F.V. VESELOV
- C6-107** *LV feeder identification: prior requirement to operate LV grids with high penetration of DER and new loads*
L. MARRÓN
- C6-108** *Evaluation of PV output fluctuation suppression by cooperative control of distributed CHP and storage battery*
T. HIRAI, K. NAKAO, K. YAKIRE, E. ISONO, Y. NORO
- C6-109** *CANCELLED - EU FP7 project GRID4EU DEMO # 2 – LV network monitoring and control*
- C6-110** *Voltage control in distribution networks with high share of distributed generation*
L. ULJANIĆ, B. BLAŽIČ, I. PAPIČ, C. DIERCKXSENS, B. BLETTERIE, W. DEPREZ
PS2: Operation and control of active distribution networks and dispersed generation
- C6-201** *Economic dispatch of smart distribution grids considering aggregators of plug-in electric vehicles*
P.A. BENALCÁZAR, M.E. SAMPER, A. VARGAS
- C6-202** *Impacts of photovoltaic power variability on power distribution networks based on year-long data of a 1.22 MWp system*
A.G. CAMERON, R. YAN, T. SAHA, A. THOMAS
- C6-203** *Comparative analysis of distributed generation connection requirements in Brazilian utilities*
C.M. LUIZ, E. VINCENTINI, R.D. BARBOSA, P.H.R.P. GAMA, A.R. AOKI, T.V.M. NETO
- C6-204** *Study on the cluster control strategies of distributed energy resources integrated to the local distribution network*
R.CHEN, X. DONG, S. HUANG, L. YU, G. CAI, P. LI
- C6-205** *Integration of electric-cars into an existing virtual power plant – Experiences from a lighthouse project*
B. FENN, A. DOSS, B.M. BUCHHOLZ, V. BUEHNER, P. FRANZ, A. HOFFMANN
- C6-206** *The RiesLing (Germany) and InovGrid (Portugal) projects - Pilot projects for innovative hardware and software solutions for Smart Grid requirements*
S. KÄMPFER, P. G. MATOS, C. KÖRNER, J. BACKES
- C6-207** *Innovation in distribution management systems - PRICE GEN project: energy management and reduction of losses in low voltage networks*
F. SALAZAR SÁEZ
- C6-208** *Active distribution system management*
J. TELLO-GUIJARRO
- C6-209** *Decentralised storage systems for applications on electrical distribution networks: tests and field results*
F. CAZZATO, L. COCCHI, M. DI CLERICO, C. D'ADAMO, C. D'ORINZI
- C6-210** *Active MV distribution networks : functional validation of the advanced voltage controller in the Grid4EU Italian demonstrator*
D. MONETA, C. CARLINI, P. MORA, L. CONSIGLIO, D. STEIN
- C6-211** *Flexible plug and play low carbon networks: an open and scalable active network management solution for a faster and cheaper distributed generation connections*
S. GEORGIPOULOS, E. CERQUEIRA, R. JOHNSTON, R. CURRIE
- C6-212** *Probabilistic operational envelopes for demand response of new low carbon loads on low voltage networks*
D.F. FRAME, G.W. AULT
- C6-213** *Performance evaluation of control algorithms for active distribution networks - the potential for algorithm selection*
J.E. KING, P.C. TAYLOR, S.C.E. JUPE
- C6-214** *Leveraging radio communication to enable effective protection of distributed energy resources*
M. MYNAM, D. FINNEY
- C6-215** *Smart distribution application guide – IEEE Project P1854*
S. BAHRAMIRAD, M. BOLLEN, G. CLARK, M. SHAHIDEHPUR, J. SVACHULA, A. KHODAEI, G. SIMARD
- C6-216** *Evaluation of voltage control system for a distribution network with mediumscale PV systems connection*
K. ABE, Y. MATSUURA, S. KANJA, T.TAKANO, R.TAKAHASHI

- C6-217** **Exploitation of AMR data for DMS functionalities**
D. KOUKOULA, A.DIMEAS, G. SIDERATOS, N. HATZIARGYRIOU, M. KOUVELETSOU, K. ANDREADIS, E. LEONIDAKI, I. VITELLAS
- C6-218** **1MWh BESS demonstration project for energy time-shift in Korea**
J.M. LEE, B.G. JIN, Y.J. CHOI, K.W. SEO
PS3: New roles and services of distribution systems for transmission system operation
- C6-301** **The Nice Grid project: using distributed energy resources to reduce power demand through advanced network management**
J.C. PASSELERGUE, M. MUSCHOLL, G. FOGGIA, C. LEBOSSÉ, K. MERCIER, S. ALBOU, B. CHAZOTTES, A. MICHIORRI, G. KARINIOTAKIS
- C6-302** **Reactive power provision by distribution system operators**
E. KAEMPF, M. BRAUN, A. SCHWEER, W. BECKER, R. HALBAUER, F. BERGER

SC D1 MATERIALS AND EMERGING TEST TECHNIQUES

PS1: Electrical insulation systems under DC voltage

- D1-101** **Behaviour of insulators under hybrid electrical AC/DC field stress**
J. KNAUEL, A. WAGNER, R. PUFFER, J.M. SEIFERT, S. LIU, M. BRÜCKNER, B. RUSEK, S. STEEVENS, A. GRAVELMANN, K. KLEINEKORTE
- D1-102** **Solid/Gaseous insulation systems for compact HVDC solutions**
A. WINTER, J. KINDERSBERGER, M. TENZER, V. HINRICHSSEN, L. ZAVATTONI, O. LESAIN, M. MUHR, D. IMAMOVIC
- D1-103** **Solid insulation in DC gas-insulated systems**
U. RIECHERT
- D1-104** **Characteristics of candidate material systems for next generation extruded HVDC cables**
V. ENGLUND, J. ANDERSSON, J.-O. BOSTRÖM, V. ERIKSSON, P.-O. HAGSTRAND, J. JUNGQVIST, W. LOYENS, U.H. NILSSON, A. SMEDBERG

PS2: Emerging test techniques and diagnostic tools

- D1-201** **Atmospheric corrections for impulse voltages under high humidity conditions**
R.R. DIAZ, A.A. SEGOVIA
- D1-202** **Application of the UHF technology to detect and locate partial discharges in liquid immersed transformer**
S. HOEK, M. KRÜGER, S. KÖRBER, A. KRAETGE
- D1-203** **Comparison of digital analysis procedures for high-voltage impulses specified in recently revised IEC and IEEE standards on high-voltage test techniques**
Y. LI, W. YAN
- D1-204** **Contact angle measurement as a potential tool for electrical insulating paper condition assessment**
D. VRSALJKO, V. HARAMIJA, V. DURINA, M. POLJAK, B. MUSULIN, M. LESKOVAC
- D1-205** **Moisture estimation in oil filled equipment by capacitive sensors and Karl-Fischer Titration – Is it the same?**
I. ATANASOVA-HOEHLIN, U. SUNDERMANN, M. KUFFEL, ST. Ettl
- D1-206** **Investigations on application of k-factor method for evaluation of impulse waveforms generated during impulse tests on transformers and reactors**
A. PRADEEP, M.M. BHAWAY, S.V.N. J. SUNDAR
- D1-207** **Cavitation process diagnostics in high-voltage oil-filled electrical equipment**
L. A. DARIAN
- D1-208** **Calibration constant and associated uncertainty of high frequency current transformers for off-line or on-line partial discharge measurement in high voltage insulated cables**
P. LLOVERA
- D1-209** **Test procedures for use of wireless partial discharges instrumentation in HV networks**
R. CANDELA, A. DI STEFANO, G. FISCELLI, S. FRANCHI BONOMI, G.C. GIACONIA, A. GUALANO
- D1-210** **Fundamental study on detection method of residual charge from water tree degraded XLPE cables with pulse voltage**
T. KURIHARA, T. OKAMOTO, T. TSUJI, K. UCHIDA, M.H. KIM, N. HOZUMI
- D1-211** **Study of AC insulation tests for UHV substation equipment - Partial discharge and combined impulse voltage tests -**
S. OKABE, T. TSUBOI, G. UETA, T. KOBAYASHI, H. KOYAMA, H. WADA
- D1-212** **Application of weather models for the evaluation of design ESDD for harsh pollution conditions**
I. GUTMAN, C. AHLHOLM, K. HALSAN, R. EIDE, L. CARLSHEM, W.L. VOSLOO, J-F. GOFFINET

- D1-213** *Atmospheric and altitude correction of air gaps, clean and polluted insulators: state-of-the-art within CIGRE and IEC*
I GUTMAN, A PIGINI, J. RICKMANN, J. FAN, D. WU, E. GOCKENBACH
- D1-214** *Critical role of failure investigations in effective asset management*
A. AL-HADABI, K. AL-ROMAIMI, A. JOHNSON, J. WETZER, A. SHARMA
- D1-215** *Estimating humidity of oil-filled power transformers: in-service experiences and experimental research*
T. GRADNIK, B. ČUČEK
- D1-216** *Dielectric characteristics of winding in oil filled transformer using turn- to-turn and section-to-section insulation model*
Y.J. LEE, J.H. LEE, I.J. SEO, J.Y. KOO, S.J. CHO Y.H. KIM, B.Y. SEOK
- D1-217** *New locating method of partial discharges in power transformers based on electromagnetic wave propagation characteristics*
K.R. HWANG, J.R. JUNG, Y.M. KIM, H.J. YANG

PS3: Properties and potential applications of new materials

- D1-301** *Application of IEC 61788-3 for the determination of the DC critical current of high temperature superconductors of second generation*
A. POLASEK, R. DIAS, O. ORSINO FILHO, F. SASS, P. BARUSCO, F.G.R. MARTINS, A.C. FERREIRA, R. DE ANDRADE JR., F.J.M. DIAS, D.H.N. DIAS, G.G. SOTELO
- D1-302** *Esterification reaction and moisture migration between insulation paper and a corn oil based natural ester*
H.M. WILHELM, A. CABRINO, L.L. SILVA, D. SILVA, H. HOSSRI, C. GALDEANO, M.M. SILVA JR., P.O. FERNANDES, H.P. SILVA
- D1-303** *The effect of semiconductive nanoparticles on the insulating properties of thermal aged transformer oils*
Y.Z. LV, C.R. LI, Q. WANG, W. WANG, Y.F. DU
- D1-304** *Loss and recovery of hydrophobicity of SR insulators under different climatic conditions in Egypt*
B.A. ARAFA, A. NOSSEIR
- D1-305** *SF6 alternative development for high voltage switchgear*
Y. KIEFFEL, A. GIRODET
- D1-306** *Critical electric field strength and effective ionization coefficient measurements*
P. HÄFLIGER
- D1-307** *Eco-friendly solid insulation for high voltage GIS*
K. POHLINK
- D1-308** *CF3I and its mixtures: potential for electrical insulation*
M.S. KAMARUDIN, L. CHEN, P. WIDGER, K.H. ELNADDAB, H. GRIFFITHS, A. HADDAD
- D1-309** *Electric field grading techniques in power apparatus using functional materials*
N. HAYAKAWA, K. KATO, H. OKUBO, H. HAMA, Y. HOSHINA, T. ROKUNOHE

SC D2 INFORMATION SYSTEMS AND TELECOMMUNICATION

PS1: Information and telecommunication technologies for connecting distributed energy resources

- D2-101** *Study and practice of cybersecurity situation evaluation method for smart grid*
K. GAO, Y. WANG, R. XU
- D2-102** *Study on just-in-time decision of demand respond based on complex event processing*
J.Y. WANG, N. LI, Y.X. XIE, X.Z. LI, D. P. WANG, F. Y. WANG
- D2-103** *Powerline communications for connecting distributed energy resources*
T. ARZUAGA
- D2-104** *Security of communications in voltage control for Grids connecting DER: impact analysis and anomalous behaviours*
G. DONDOSSOLA, R. TERRUGIA
- D2-105** *Control and measurement system to evaluate solar power grid-tie inverter performance*
R. GUEVARA, C. TELLO, J. RODRÍGUEZ
- D2-106** *DSO's strategic choice for private telecom networks*
G. ROBICHON
- D2-107** *Future smart seters and meter data management*
A.I. BATAINEH
- D2-108** *Technical specification for the utilisation of web services for the electronic data interchanges on the Internal Electricity Market*
A. □MARTIN, E. JIMENEZ, J. BEMBIBRE

- D2-109** *A new experience of Optical Phase Conductor (OPPC) in Red Eléctrica de España*
S. KWIK ALLAN, J.M. DELGADO ALVAREZ
- PS2: Maintaining operational IT reliability in an evolving environment**
- D2-201** *IT platforms of Japanese electric power companies*
T. YOSHIDA, M. OKAMOTO, N. TAMEHISA, M. KIKEGAWA, C. TSUJI, T. HANAKITA
- D2-202** *Experiences and practices in the implementation of IT governance in Mexican electrical utility*
I. PARRA, G. ARROYO, A. GARCIA
- D2-203** *Security in remote services used by EPU's*
P. SITBON, C. POIRIER, J. ZERBST, D. HOLSTEIN
- PS3: Trends in managing utility communication networks**
- D2-301** *Channel estimation for a PLC-OFDM system, using LSE in combination with Neural Networks for Smart Grid Applications.*
AGUIRRE J. F., DE YONG D.M., MAGNAGO F.
- D2-302** *Experiences with an IP/MPLS network in utility environment*
T. LEROY
- D2-303** *The telecommunications business expansion at Eletrobras Eletronorte and the needs for changes in operation and maintenance*
M. COSTA DE ARAUJO, M. ALVES RODRIGUES
- D2-304** *Beyond Chesf's telecommunications information security analysis*
A. TEMPORAL, H. BURLE, C.A. BASTOS
- D2-305** *Managing adapted packet network architectures for smart IP-based services*
M. MESBAH, A. MOAINI, V. MENEGUIM
- D2-306** *Challenges in establishment of large OPGW based communication network - Indian experience*
N.S. SODHA, H.H. SHARAN, S. RANI
- D2-307** *Smart grid network through integrated SCADA System-Karnataka Model- A case study*
K.R. ADISHESHAN
- D2-308** *Telecommunication networks for smart grids deployment*
B. PERALTA VICENTE
- D2-309** *CANCELLED - Benefits of the internet protocols for last mile distribution / field area networks*
- D2-310** *Trends of communication networks in Japanese electric power utilities*
H. TSUCHIYA, K. TAKAHASHI, K. SHIMOOSAKO, N. TAKAHASHI, S. ONO, Y. TADA
- D2-311** *CANCELLED - Field Area Network Implementation for AMI, SCADA and Demand Response Applications*
- D2-312** *Smart Communication System SCS*
J. RAMIREZ, H. CABRERA