

SAUPEC-04

University of Stellenbosch
22-23 Jan 2004



SAUPEC 2004 PROGRAMME

21 – January

AGENDA FOR THE REPORT-BACK MEETING

09:00	Tea/Coffee Registration
09:30	Opening and Welcome Chairperson: J W Gosling, Eskom
09:45	Grantees Report-Back Parallel Sessions
11:00	Tea/Coffee
11:15	Grantees Report-Back Parallel Sessions
13:15	Lunch
14:00	General Report-Back
15:15	Close
15:30	Tea/Coffee

22 – January

Registration, Coffee/Tea	08:00 – 09:00
Plenary Session	
Welcome	09:00
Message from Chairman and Announcements	
Keynote address (Aberdare cables)	09:30 – 10:00
Coffee/Tea	10:00 – 10:30
Parallel Sessions 1a , 1b , 1c	10:30 – 12:30
Lunch	12:30 – 13:15
Parallel Sessions 2a , 2b , 2c	13:15 – 14:45
Coffee/Tea	14:45 – 15:15
Parallel Sessions 3a , 3b , 3c	15:15 – 16:45
Dinner at Stellenbosch Lodge, dress: smart casual	19:30

23 – January

Coffee/Tea	08:00 – 08:30
Parallel Sessions 4a , 4b , 4c	08:30 – 10:00
Coffee/Tea	10:00 – 10:30
Parallel Sessions 5a , 5b , 5c	10:30 – 12:00
Prize-giving and closure	12:00 – 12:30
Lunch	12:30

SAUPEC 2004 CATEGORIES

1. [Transmission & Distribution Networks](#)
2. [Power Systems and Power Engineering Education](#)
3. [Power Electronics](#)
4. [Electric machines and drives](#)
5. [High Voltage](#)
6. [Protection and System Automation](#)
7. [Computer applications](#)
8. [Renewable Energy Systems](#)
9. [Energy Demand and Electro-Technologies](#)
10. [EMC and fields](#)

SAUPEC 2004 PAPERS & SESSIONS

Transmission & Distribution Networks					
NO.	SURNAME	INIT	CAT	SES	PAPER TITLE
1	Fourie	JW	1	3c	A Strategy For The Management Of Energy Losses In A Local Electricity Distribution Network
2	Herman	R	1		A Sample Design For Non-Domestic Electrification Load Models
3	Jimoh	A	1		Distribution Circuit Loss Minimization Through Feeder Reconfiguration
4	Kutelama	D	1		Technology For An Isolated Rural Electrification Network In Congo. A Case Study
5	Mwakabaga	T	1		A Low Cost Method For Determining Geographic Position To Support The Mobile Workforce In The Maintenance Of Electrical Networks
6	Sebola	LE	1		Design And Implementation Of A Secure Mobile Commerce Based Prepaid Electricity Tokens Vending System
7	Yan	J	1		A Game Theoretical Approach Of Analysing Market Power In The Restructured Electricity Market
Total:				7	back to SESSIONS back to CATEGORIES

Power Systems and Power Engineering Education					
NO.	SURNAME	INIT	CAT	SES	PAPER TITLE
8	Braid	J	2	3b	Load Sharing Between Multi-Coupled Synchronous Machines
9	Burger	N	2		Power System Optimisation Techniques – Theory And Application
10	Gosai	T	2		Ferroresonance Of An 88kv Network
11	Khoza	R	2		Dynamic Performance Of A Multi-Bus Reticulation Network With Multiple Distributed Generation Injection (Part 1 – Electrical Losses)
12	Khoza	R	2		Dynamic Performance Of A Multi-Bus Reticulation Network With Multiple Distributed Generation Injection (Part 2 – Electrical Fault Analysis)
13	Khoza	R	2		Dynamic Performance Of A Multi-Bus Reticulation Network With Multiple Distributed Generation Injection (Part 3 – Economic Dispatch)
14	Lamont	L	2	4b	A Detailed Evaluation Of High-Speed Generator Designs For A New Power Plant
15	Mathebula	VC	2		Static Reactive Power Control In Electric Systems With Special Reference To Switched Capacitors Operating In Parallel With A Static Reactive Power Compensator
16	Modipane	KC	2		Power System Harmonic Analysis
17	Rigby	BS	2		The Real Time Power Systems Studies Centre: A Facility For Enhanced Teaching And Research In Power Engineering
18	Sithole	V	2		Design Of A Database For The Determination Of The Electrical Performance Of An Hvd Scheme
19	Untiedt	JAJ	2		Static Voltage Stability Measures
Total:				12	back to SESSIONS back to CATEGORIES

Power Electronics					
No.	SURNAME	INIT	CAT	SES	PAPER TITLE
20	Ally	A	3	1b	Thyristor Controlled Series Capacitor, Variable Impedance Control, Power Flow Control
21	Hove	M	3		Towards Absolute Voltage Clamping Of A Prototype Metal Oxide Varistor (Mov)
22	Huang	F-W	3		A Continuous-Time Model Of A Voltage-Source Inverter For Facts Application Studies
23	Michalopoulos	A	3		Investigation Into The Surge Capability Of Switch-Mode Pc Power Supplies
24	Moeng	WM	3		Design Of A Dual Electric Arc Furnace Controller Using Labviewô
25	Naidoo	K	3		Design And Comparative Analysis Of A Single-Phase Inverter Fed From A Photovoltaic Fuel Cell Generator
26	Pillay	A	3		Performance Analysis Of A Laboratory-Scale Thyristor Controlled Series Capacitor
27	Pillay Carpanen	R	3		The Application Of The Thyristor Controlled Series Capacitor For Enhancing Generator Transient Stability
28	Swart	JS	3		The Design And Development Of A High Frequency Mosfet Driver
Total:				9	back to SESSIONS back to CATEGORIES

Electric machines and drives					
No.	SURNAME	INIT	CAT	SES	PAPER TITLE
29	Benn	L	4	3a	Model Gantry Cranewith Dynamic Feedback Swing Control
30	Berger	JM	4		The Design And Construction Of A Tubular Linear Induction Motor (TLIM) For Deep Level Mining Applications
31	Davies	SQ	4		The Design Construction And Control Of A Slot-Less X-Y Linear Synchronous Motor
32	Fakude	T	4		Modelling And Dynamic Analysis Of A Solar-Powered Fractional HP Universal Motor For High Speed Applications
33	Hennache	A	4		Review Of Monitoring And Diagnosing Electrical Machines:Strategies And Techniques
34	Hennache	A	4	4a	Parasitic Phenomena Occuring In Rotating Machines: Problems And Solutions
35	Mthombeni	L	4		Lamination Core Loss Measurements In Machines Operating With PWM
36	Ndlovu	KS	4		Induction Motor Starting Characteristics With Shunt And Series Capacitor Compensation Methods With Particular Reference To Mains Supply Voltage Disturbance
37	Rakgati	ET	4		Performance Comparison Of Optimised Designed Three And Five Phases Reluctance Synchronous Machines With Different Rotor Structures
38	Sibande	SE	4		Design Optimisation Of 110 Kw Reluctance Synchronous Machine With Permanent Magnet Assisted Rotor
39	Van der Merwe	NT	4	5a	Overview On The Application Of Artificial Intelligence And Signal Processing Techniques In The Condition Monitoring Of Rotating Machinery
40	Voss	E	4		On The Use Of Magnetic Wedges In Synchronous Reluctance Machines
41	Wang	S	4		Switched Reluctance Motor Measurements And Simulation Models
Total:				13	back to SESSIONS back to CATEGORIES

High Voltage						
No.	SURNAME	IN IT	CAT	SES	PAPER TITLE	
42	Beerbul	N	5	1a	Local High Frequency Detection Of Partial Discharge Activity In Joints Of XLPE Cables	
43	Borrill	LD	5		Non-Destructive Testing Of Capless Porcelain Line Post Insulators To Detect Internal Defects	
44	Chetty	L	5		Tapping Small Amounts Of Power From HVDC Transmission Lines Using A Novel Voltage Source Converter	
45	Holtzhausen	JP	5		An Investigation Into The Design Of Oil-Less Puncture Test Electrodes	
46	Jooste	FJ	5		Lightning Resistant Fuses With Enhanced 50 Hz Applications	
47	Magige	KM	5		Hydrophobicity Of Composite Insulators Exposed To Coastal Contamination	
48	Mahlasela	VS	5		Analysis Of Insulation Failure Mode In A High Voltage Current Transformer	
49	Mathosa	MC	5		The Lightning Performance Of 300 Kv BIL Built Distribution Lines Due To Indirect And Direct Strikes	
50	Ngobeni	SS	5		Evaluation Of Components For High Voltage (66kv – 132kv) Outdoor Cable Terminations In Comparison To Test And Installation Methods	
51	Ngqungqa	SH	5		2a	The Influence Of Height On The Incidence Of Positive Upward Leaders From Tall Structures: Some Preliminary Results
52	Nyamupangedengu	C	5	Time Dependency Of Partial Discharge Pulses In XLPE MV Power Cables		
53	Ravjee	CR	5	Partial Discharge Analysis Of Epoxy Resin Spacer Insulators In A Three-Phase SF6 Duct		
54	Sukhnandan	A	5	An Investigation Of Fire Induced Flashovers Of Transmission Lines		
55	Walker	JJ	5	DC Component As A Diagnostic Measurement For Water Tree Analysis		
56	Walker	JJ	5	Polarity Effect Of Water Trees On The DC Component		
Total:				15	back to SESSIONS	back to CATEGORIES

Protection and System Automation						
No.	SURNAME	INIT	CAT	SES	PAPER TITLE	
57	Cross	N	6	4c	The Development And Testing Of A Fault-Tolerant Resonant Network	
58	Garnie	Z	6		Investigation Of Contactor Performance Under Voltage Dip Conditions	
59	Green	BC	6		Real-Time Digital Simulator Testing Of Overcurrent And Distance Protection Schemes	
60	Mafatle	N	6		Sub-Transmission Line Screening Wire Design And Earthing Configuration	
61	Sewkumar	P	6		Fusing Philosophy For Eskom Distribution's North West Region	
62	Tessendorf	RE	6		The Feasibility Of Developing A Low-Cost Fault Level Meter	
63	Van den Berg	JL	6		Protection Problems And Solutions Associated With Series Compensated Transmission Lines	
Total:				7	back to SESSIONS	back to CATEGORIES

Computer applications					
No.	SURNAME	INIT	CAT	SES	PAPER TITLE
64	Barkhuizen	R	7	1c	Flicker Prediction Software Tool
65	Egner	S	7		EMT/ATP Building Blocks for Use In Simulations For harmonic Analysis Of Reticulation Networks
66	Els	A	7		Intelligent Agents Technology For Substation Data Acquisition Systems
67	Hearn	GB	7		Selling Prepaid Electricity Securely And Cost Effectively Via The Internet
68	Ireland	JND	7		Embedded DSP Interfaces And Software For Rapid Prototyping Of Advanced Realtime Electric Motor And Power Control Systems
69	Modisane	T	7		Real-Time Digital Simulator Testing Of Generator Excitation Control Systems
70	West	NJ	7		Computer Automation Of A Laser-Triggered Current Impulse Generator
71	Stemmet	WC	7		A Software Based Methodology For Calculating Powers In Three Phase Networks With Non-Sinusoidal Voltages And Currents
72	Tessendorf	RE	7		A Comparison Of Neural And Neuro-Fuzzy Techniques For The Condition Monitoring Of Rolling Element Bearings
73	Yong-Le	A	7		Experimental Research On Control A Slipring Induction Motor As An Electrically Commutated DC Motor
Total:				10	back to SESSIONS back to CATEGORIES

Renewable Energy Systems					
No.	SURNAME	INIT	CAT	SES	PAPER TITLE
74	Barendse	PS	8	2c	Matlab Simulation Of A Doubly-Fed Induction Generator (DFIG) System In It's Application To Wind Energy Generation
75	Bekker	B	8		Methods To Extract Maximum Electrical Energy From PV Panels On The Earth's Surface
76	Lazenby	WH	8		Some Observations on Distance to Fault Calculations, using the Sachdef Algorithm
77	Redecker	H	8		Bidirectional Converter For Solar Dish System
Total:				4	back to SESSIONS back to CATEGORIES

Energy Demand and Electro-Technologies					
No.	SURNAME	INIT	CAT	SES	PAPER TITLE
78	Beier	DG	9	2b	Mine Hoist Control System To Counter Rope Oscillation
79	Chan	KHC	9		Measurement Of Metallic Material Thickness Using A Linear Motor
80	Horn	GF	9		Improved Bulk Hot Water Heating System For A University Hostel
81	Modipane	KC	9		Analysis Of Industrial Power Meters In The Presence Of Harmonics
82	Pillay	M	9		The Joining Of Single Domain High Temperature Superconducting (HTSC)
83	Doorduyn	WC	9		On-Line Time Domain Pulse Reflectometry In A LV Network
Total:				6	back to SESSIONS back to CATEGORIES

EMC and fields

No.	SURNAME	INIT	CAT	SES	PAPER TITLE
84	De Beer	JC	10	5b	FE Modelling And Measuring The Magnetic Field Distribution Of A Railway Track
85	Engelbrecht	JJ	10		Impact Of Large Wind Generators In Close Proximity To A Satellite Earth Station – Some Emc Considerations And Measurement Results
86	Holtzhausen	JP	10		Power Frequency Electric And Magnetic Fields Of Power Lines
87	Pretorius	PH	10		On The Restricted Use Of Mobile Transceivers In Sensitive Electric Utility Environments
88	Sibilant	GC	10		Electromagnetic Noise In The Power Line Carrier Systems Of An Hvdc Scheme
89	Urban	RG	10		Preliminary Predictions Of Corona Noise On High Voltage Ac Lines Using Cage Data
Total:			6	back to SESSIONS back to CATEGORIES	