

The following a list of publications by Dr P H Pretorius

**THESIS / DISSERTATIONS / BOOKS**

P H Pretorius, The Assessment of Human Exposure to Power Frequency Electric and Magnetic Fields, University of Pretoria, M.Bio-Eng. Dissertation, Feb 1991.

P H Pretorius, Analysis and Control of Electromagnetic Interference Generated in High Voltage Substations During the Repetitive Breakdown of Disconnect Air Gaps, Ph.D. Thesis, University of the Witwatersrand, Apr 2000.

P H Pretorius, Electromagnetic Compatibility (EMC) in Substations – A Guide to Interference Free Secondary Environments, Published by Empetus Close Corporation, ISBN 0-620-35213-2, 2005

**CONTRIBUTIONS TO CHAPTERS OF BOOKS**

Eskom Power Series of Books: The Planning, Design and Construction of Overhead Power Lines;

Eskom Power Series of Books: Electromagnetic Compatibility (EMC) in Power Utilities (Under development).

Section on EMF Issues in EHV Line Design for a book and course on EHV Line Design – Best Practices Guide for EHV AC Transmission Lines Over 230 kV Up to Including 765 kV - for CEATI International, Canada.

**CONTRIBUTIONS TO PERIODICALS**

Regular contributions since Issue 3, May 2020 under the banner: “Why on Earth” in the Lightning Mag ([www.ziniapublications.com](http://www.ziniapublications.com)). The Why on Earth™ series is an initiative by TERRATECH, South Africa ([www.terratechnology.co.za](http://www.terratechnology.co.za)) to create awareness and transfer sound knowledge on Earthing, EMC and Lightning Protection. © 2020, 2021 – All rights reserved.

**COURSES PRESENTED**

An Introduction to Power Frequency Electric and Magnetic Fields (EMF), a one day course compiled and presented by P H Pretorius, Nov 1995.

Power Frequency Electric and Magnetic Fields (EMF), compiled and presented by P H Pretorius as part of a Transmission Line Design Course, presented 2000, 2001, 2002, 2003, 2004, 2005 and 2006.

Electromagnetic Compatibility (EMC) in Substations, compiled and presented by P H Pretorius as part of a Substation Design Course, 2005 and 2006.

Earthing Networks – A Basic Introduction, course compiled and presented by P H Pretorius to Eskom’s Auxiliary Care Group from Generation, Aug 2002.

An Introduction to Electromagnetic Compatibility in Power Systems, Course module compiled and presented by P H Pretorius as part of an MSc Course for the University of Kwa-Zulu Natal and Eskom, presented Aug 2002, May 2005.

Electromagnetic Compatibility (EMC) in Substations - Ensuring Interference Free Secondary Environments, A one day course, ECSA CPD Validation No: SAIEE 06002 V0206 0109, ISBN 0-620-35213-2, 2006.

Presented modules of EMF and EMC in the Line Design and Substation Design courses of Trans-Africa Projects, 2006 - 2009

Developed and presented a two day CDEGS course (Covers eg earthing design of substation earth electrodes, Electromagnetic Field coupling to pipelines and Tower Surge Impedance modeling), Trans-Africa Projects, 2008.

Developed and presented a two day CDEGS course on earthing design of substation earth electrodes to Eskom Substation Technology, 2012.

Presented a one day CPD course of Electromagnetic Coupling between Power Lines and Pipelines to Members of the Corrosion Institute of South Africa, 2015.

## **JOURNAL PUBLICATIONS:**

- P H Pretorius, Human Exposure to Power Frequency Fields, Electricity and Control, p 23-27, Mar 1991.
- P H Pretorius, A Probabilistic Approach Towards Predicting Power Line Magnetic Fields at Ground Level, Elektron, Jul 1993.
- P H Pretorius, Electric and Magnetic Fields (EMF): Potential Effect on Overhead Line Design, Elektron, Feb 1996.
- P H Pretorius, P J Cilliers, Electromagnetic Interference in Clinical Environments and its Effect on Sensitive Electronic Biomedical Equipment and Devices, Elektron, May 1996.
- P H Pretorius, W A Krige, EMC in Entertainment, Media and Communications, Elektron, Sep 1997.
- P H Pretorius, Possible Health Effects of EMF – Managing the Issue Remains A Challenge, Elektron, Aug 1997.
- P H Pretorius, Health Effects from Power Frequency Electric and Magnetic Fields: Recent Findings, Energize, Jan / Feb 1999.
- P H Pretorius, Magnetic Field Interference with Computer Monitors, Elektron, May 1999.
- P H Pretorius, A C Britten, Focus on EMC Issues for Electric Power Systems, Elektron, Feb 2001.
- P H Pretorius, On the Restricted Use of Mobile Transceivers in Sensitive Electric Utility Environments, Electricity & Control, Feb 2004.
- P H Pretorius, Electromagnetic fields from mobile phone base stations, Elektron, Aug 2005.
- P H Pretorius, K J Sadurski : Discussed paper by Z Yan, B L Qin, X Lin, R Y Weng, G Gela, Calculation and Measurement of Field Parameters During Live-Line Maintenance, IEEE Trans on Power Delivery, Vol 6, No 3, Jul 1991.

## **CONFERENCE PAPERS :**

- P H Pretorius, E G Clarke, Eskom's Research into Power Frequency Fields, Power Industry Technology Trends Conference, Eskom Engineering Investigations, 15-18 May 1989.
- P H Pretorius, A Survey on Establishing an Activity Systems Model for the Prediction of Human Exposure to 50/60 Hz Electric and Magnetic Fields, Post Graduate Symposium, University of Pretoria, Nov 1989.
- P H Pretorius, Power Frequency Electric and Magnetic Fields and their Possible Biological Effects, 1st Eskom EMF Forum Meeting, Mar 1990.
- P H Pretorius, Power Frequency Fields and Cancer, Power Industry Technology Trends Conference, Eskom College, 21-23 May 1990.
- P H Pretorius, The Assessment of Human Exposure to Power Frequency Electric and Magnetic Fields, Post Graduate Symposium, University of Pretoria, Nov 1990.
- P H Pretorius, Power Frequency Electric and Magnetic Fields and their Possible Biological Effects, South African Association of Physicists in Medicine and Biology, 30th Annual Congress, 14-16 March 1990.
- P H Pretorius, Aspects Regarding Electric and Magnetic Fields (EMF) in Our Environment, 2nd South African Conference on Indoor Environmental Quality, 18 September 1992.
- P H Pretorius, Power Line Electric and Magnetic Fields (EMF) - From a Health and Safety Point of View, Practical Planning, Design and Maintenance of Power Lines, Seminar, Eskom Megawatt Park, 20 September 1995.
- P H Pretorius, J K Basson, L L du Toit, Cellular Phones: A Health Perspective, SAIEE / IEEE Workshop on EMC: DC to Visible Light, Johannesburg, 1 Oct 1996.
- P H Pretorius, Electromagnetic Interference (EMI) in Substations, Practical Planning, Design and Maintenance of Substations, LGI Seminar, University of Pretoria, 29 - 31 July 1996.
- P H Pretorius, Measurement of Power Frequency Electric and Magnetic Fields (EMF), 50<sup>th</sup> Anniversary Conference on Measurement Technology and Safety, CSIR, Pretoria, 26 & 27 Aug 1997.
- P H Pretorius, A Model to Assess Human Exposure to Power Frequency Magnetic Fields in the Live Line Working Environment, Electrical Power Engineering Seminar, Eskom College, Oct 22-23, 1991.
- P H Pretorius, Power Frequency Electric and Magnetic Fields: The Controversy, The Policy and The Litigation, 3rd EMF Forum Meeting, 15 May 1993.

P H Pretorius, Feedback from the International EMF Research Co-ordinators Group, 4th EMF Forum Meeting, 13 August 1993.

P H Pretorius, Magnetic Field Dosages Received by Eskom's Live Line Maintenance Teams, 4th EMF Forum Meeting, 13 August 1993.

P H Pretorius, Daily Magnetic Field Dosages Received in Residential and Occupational Environments, 4th EMF Forum Meeting, 13 August 1993.

P H Pretorius, Assessment of the Historical Magnetic Field Dosages Received by Eskom's Live Line Maintenance Personnel, paper presented at the Sixth International Conference on Transmission and Distribution Construction and Live Line Maintenance (ESMO-93 Conference), Las Vegas, Nevada, USA, 12-17 September 1993.

P H Pretorius, Assessing the Significance of Annual Magnetic Field Dosages Received by Live Line Maintenance Personnel, paper presented at the Sixth International Conference on Transmission and Distribution Construction and Live Line Maintenance (ESMO-93 Conference), Las Vegas, Nevada, USA, 12-17 September 1993.

P H Pretorius, Assessment of the Historical Magnetic Field Dosages Received by Eskom's Live Line Maintenance Personnel and the Significance Thereof, CIGRE Session, Paris, France, 28 August to 3 September 1994.

P H Pretorius, Power Frequency Electric and Magnetic Fields (EMF) and Their Possible Detrimental Health Effects : Managing the Issue in South Africa, 1994 CIGRE Regional Conference, held 24 - 26 May in Durban, South Africa.

P H Pretorius, Typical Daily Magnetic Field Exposure in Eskom's Occupational Environment: A Pilot Study, 16th Annual Bioelectromagnetics Society Meeting, 12 - 17 June 1994 in Copenhagen, Denmark.

P H Pretorius, Typical Daily Magnetic Field Exposure of People Residing Close to and Far Away from Power Lines: A Pilot Study", 16th Annual Bioelectromagnetics Society Meeting, 12 - 17 June 1994 in Copenhagen, Denmark.

P H Pretorius, Assessment of the Historical Magnetic Field Dosages Received by Live Line Workers and the Significance Thereof, 16th Annual Bioelectromagnetics Society Meeting, 12 - 17 June 1994 in Copenhagen, Denmark.

P H Pretorius, L de Jager, Exposure Arrangement to be Used in Studying the Role of Randomly Varied (RMS) Power Frequency Magnetic Fields As A Leukemia Promoter, 16th Annual Bioelectromagnetics Society Meeting, 12 - 17 June 1994 in Copenhagen, Denmark.

C P Roos, N Radulovic, P H Pretorius, Health Survey of Eskom Live Line Maintenance Personnel: Preliminary Results, 16th Annual Bioelectromagnetics Society Meeting, 12 - 17 June 1994 in Copenhagen, Denmark.

P H Pretorius, Feedback : The 17th Annual Bioelectromagnetics Society Meeting and the Annual Meeting of the International EMF Research Co-ordinators Group, 6th EMF Forum Meeting, 16 November 1995.

P H Pretorius, An Attempt to Quantify the Risk Associated with Power Frequency Magnetic Field Exposure, 6th EMF Forum Meeting, 16 November 1995.

P H Pretorius, M Baholo, A C Britten, Interior Magnetic Fields Associated with Driving an Electric Vehicle: A Case Study, SAUPEC, University of the Witwatersrand, 22/23 Jan 1996.

P H Pretorius, A C Britten, J P Reynders, An Active and Systematic Approach to Achieve Electromagnetic Compatibility (EMC) throughout a Large Electric Power System, SAUPEC, University of the Witwatersrand, 22/23 Jan 1996.

P H Pretorius, A C Britten, J P Reynders, Measured Radiated Transients Resulting from Switching Activities in Substations : Initial Results, Paper 36-203, Cigre Session, Paris, Aug 1996.

P H Pretorius, An Attempt to Quantify the Suggested Risk Associated with Power Frequency Magnetic Field Exposure, Paper 36-101, Cigre Session, Paris, Aug 1996.

P H Pretorius, A C Britten, ELF Magnetic Fields in Close Proximity to a Large Static VAR Compensator : A Case Study, AFRICON, University of Stellenbosch, 24-27 Sep 1996.

P H Pretorius, Passive Shielding : A Solution to Magnetic Field Interference with Computer Monitors, SAIEE / IEEE Workshop on EMC : DC to Visible Light, Johannesburg, 1 Oct 1996.

P H Pretorius, The Suggested Health Effects of Power Frequency Magnetic Fields: Potential Impact on Overhead Lines, 15th AMEU Technical Meeting, Pietersburg, 7-9 Oct 1996.

P H Pretorius, Attendance of the Eighteenth Annual Bioelectromagnetics Society Meeting, the Annual International EMF Research Co-ordinators Group Meeting and A Visit to Hydro Quebec's Electrium: Feedback to the EMF Forum of South Africa, Annual EMF Forum meeting, Johannesburg, 22 Oct 1996.

P H Pretorius, Passive Shielding of Power Frequency Magnetic Fields, Annual EMF Forum meeting, Johannesburg, 22 Oct 1996.

P H Pretorius, EMF Issue Management: Cigre 1996 Feedback, 5th Open Cigre Seminar, Johannesburg, 17 Oct 1996.

P H Pretorius, P J Cilliers, L de Jager, Electromagnetic Therapeutic Technology: Its Place and Role in Affordable Health Care in South(ern) Africa, Paper 5B, Conference on Affordable Health Care in Southern Africa, Sun City, 1997.

P H Pretorius, A C Britten, J van Coller, J P Reynders, Experience in Measuring Disconnecter Generated Interference Currents in a High Voltage Substation Using Rogowski Coils, Paper 315, IEEE Symposium on Communications and Signal Processing (COMSIG), University of Cape Town, Sep 1998.

P H Pretorius, A C Britten, J van Coller, J P Reynders, Evaluation of the Coupling Mechanisms of Electromagnetic Disturbances Resulting from Disconnecter Switching in Substations; Experimental Design and Initial Results, Paper 299, IEEE Symposium on Communications and Signal Processing (COMSIG), University of Cape Town, Sep 1998.

P H Pretorius, A C Britten, R G Coney, D C Smith, EMC Aspects Relating to the Co-Use of Power Line Servitudes by Radio Communication Systems, SAIEE / CIGRE Colloquium: Interference in Power Systems – LF and HF, Midrand, Oct 1999.

P H Pretorius, Health Effects from Power Frequency Electric and Magnetic Fields: Recent Findings, SAIEE / CIGRE Colloquium: Interference in Power Systems – LF and HF, Midrand, Oct 1999.

C Walliser, J M van Coller, P H Pretorius, A C Britten, Experimental Investigation of Common Mode Currents in a Model of a Substation, Interference in Power Systems: Low Frequency and High Frequency, Joint SAIEE and CIGRE Colloquium, Midrand, 6-7 October 1999.

P H Pretorius, J P Reynders, A Fourie, On Radiated EMI Generated by Disconnecter Operations in Open Air High Voltage Substations, SAIEE / CIGRE Colloquium: Interference in Power Systems – LF and HF, Midrand, Oct 1999.

P H Pretorius, J M van Coller, J P Reynders, Laboratory Evaluation of a Conductive Bulkhead to be Used to Protect Sensitive Equipment from EMI in High Voltage Substation Control Rooms, SAIEE / CIGRE Colloquium: Interference in Power Systems – LF and HF, Midrand, Oct 1999.

P H Pretorius, A C Britten, J M van Coller, J P Reynders, The Modelling of Current Behaviour as a Result of Disconnecter Operation in a Large High Voltage Substation, SAUPEC, Durban, Jan 2000.

P H Pretorius, A C Britten, J P Reynders, J M van Coller, Dominant Electromagnetic Coupling Modes Associated with Disconnecter Operations in a High Voltage Substation, EMC Europe Symposium, Brugge, Sep 2000.

P H Pretorius, A C Britten, J P Reynders, J M van Coller, Measurement of Interfering Common Mode Currents Generated During Disconnect Operations in a High Voltage Substation, EMC Europe Symposium, Brugge, Sep 2000.

P H Pretorius, A C Britten, J P Reynders, J M van Coller, Control of Interfering Common Mode Currents Generated During Disconnecter Operations in a High Voltage Substation, EMC Europe Symposium, Brugge, Sep 2000.

P H Pretorius, A C Britten, EMC Aspects Relating to the Co-Use of Power Line Servitudes by Radio Communication Systems, Paper 365, SATNAC, Wild Coast, Sep 2001.

P H Pretorius, A C Britten, J P Reynders, Smart Yards – HV Substations with Reduced EMI Levels: Concept, Initial Characterisation and Feasibility, CIGRE Regional Conference, Somerset West, Oct 2002.

P H Pretorius, A C Britten, I Smit, Electromagnetic Compatibility (EMC) Aspects Associated with Large Wind Generators – Initial Findings, CIGRE Regional Conference, Somerset West, Oct 2002.

Imposimato, C, Erikson, A, Hoefelman, J, Pretorius, P H, Siew, W H, Wong, P S, EMI Characterisation of HVAC Substations – Updated Data and Influence on Immunity Assessment, CIGRE Session, Paris, France, Aug 2002.

P H Pretorius, On the Restricted Use of Mobile Transceivers in Sensitive Electric Utility Environments, SAUPEC 2004, Stellenbosch, 22 – 23 January 2004.

J J Engelbrecht, P H Pretorius, W A Cronje, Impact of Large Wind Generators in Close Proximity to A Satellite Earth Station – Some EMC Considerations and Measurement Results, SAUPEC 2004, Stellenbosch, 22 – 23 January 2004.

P H Pretorius, On the Assessment of Live Line Worker Exposure to Magnetic Fields, EMC Europe 2004, Eindhoven, 2004.

D Muftic, R Ramnarain, A Burger, P H Pretorius, G van Harmelen, D Venter, S Heunis, Advanced Electrical Design Software for Overhead Lines - An Integrated Approach, Inaugural IEEE PES 2005 Conference and Exposition in Africa, Durban, South Africa, Jul 2005.

P H Pretorius, K R Hubbard, A C Britten, Implications of the Revised ICNIRP Electric Field Exposure Guideline on the Design of Overhead AC Power Lines – 400kV and Above, Paper submitted for presentation at the 17<sup>th</sup> International Zurich Symposium on EMC, Singapore, Feb 2006.

P H Pretorius, Protection of Large Quadrupeds Against Earth Potential Rise Set Up by Lightning, Paper submitted for presentation at the South African Universities Power Engineering Conference (SAUPEC), January 2006.

P H Pretorius, EMC Society of South Africa – Expression of Interest from Local Industry, Paper submitted for presentation at the South African Universities Power Engineering Conference (SAUPEC), January 2006.

D Muftic, A Burger, S Narain, R Vajeth, P H Pretorius, R Roets, G van Harmelen, D W Venter, S Heunis, Overhead Lines Electrical Design in 3-D Environment, International Conference on Overhead Lines: Design, Construction, Inspection & Maintenance, Forth Collins, Colorado USA, 27-30 March 2006.

K R Hubbard, A C Britten, P H Pretorius, Electric and Magnetic Fields from  $\pm 800$  kV High Voltage Direct Current Lines: Technical Considerations for Human Exposure, HVDC Conference, Durban, South Africa, 12 – 14 Jul 2006.

P H Pretorius, A C Britten, K R Hubbard, M E Mathebula, Novel Earth Electrodes in Substations for Improved Electromagnetic Compatibility (EMC), SAUPEC, Cape Town, 25 – 26 Jan 2007.

P H Pretorius, A C Britten, K R Hubbard, M E Mathebula, Novel Earth Electrodes in Substations for Improved Electromagnetic Compatibility (EMC), Paper to be presented, CIGRE Symposium – Transient Phenomena in Large Electric Power Systems, Zagreb, Croatia, 18 – 21 Apr 2007.

J Mokoena, P H Pretorius, P T Bhulose, A A Burger, D Muftic, Electric and Magnetic Field Limits Applied to Overhead Power Line Design in South Africa, CIGRE Colloquium on Power Frequency Electromagnetic Fields – ELF / EMF, Sarajevo, Bosnia and Herzegovina, 3 – 4 June 2009.

D Muftic, A A Burger, P H Pretorius, P T Bhulose, 3-D Electrical Design Software and Its Implementation in EMF Modelling, CIGRE Colloquium on Power Frequency Electromagnetic Fields – ELF / EMF, Sarajevo, Bosnia and Herzegovina, 3 – 4 June 2009.

P H Pretorius, A A Burger, C Curtis, D C Smith, On the Earthing of Overhead Power Lines – A Case Study, Paper P-601, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

P H Pretorius, A A Burger, Electromagnetic Coupling from Overhead Power Lines to Fences – Experimental Evaluation and Case Studies, Paper P-605, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

P H Pretorius, D Muftic, L Peter, C van der Merwe, On the Surge Impedance of 765 kV Double Circuit Towers – Validation and Application, paper P-602, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

P H Pretorius, K R Hubbard, Assessment of Electric Field Exposure in a 765 kV Open Air Substation – A Case Study, Paper C-301, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

P H Pretorius, P T Bhulose, A A Burger, D Muftic, A C Britten, A Framework for Electric and Magnetic Field Exposure Limits in Power System Design and Operation, Paper P-603, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

D Muftic, L Peter, P H Pretorius, A A Burger, F Mokhonoana, R Singh, S Narain, L du Plessis, J Diez Serrano, V Naidoo, A C Britten, Design Considerations Related to Eskom's New 765 kV Double Circuit Power Lines, Paper P-604, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

P H Pretorius, T Chauke, R Saunders, R Traynor, J Havenga, Electromagnetic Compatibility and Earthing Considerations in High Temperature Nuclear Reactors, CIGRE, 6th Southern African Regional Conference and Colloquium, Somerset West, 17 - 21 August 2009.

P H Pretorius, K R Hubbard, Immunity of a Mobile HV Measurement Facility to Conducted Disturbances – Laboratory and Field testing, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

P H Pretorius, N Mahatho, E Boje, T Lorimer, Electric Field Performance of an Overhead Line Inspection Robot – Preliminary Results, Paper E-25, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

P H Pretorius, P Luhlanga, P T Bhulose, Magnetic Field Exposure of Live Line Workers on High Power Transfer 765 kV and 400 kV Power Lines, Paper E-53, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

A A Burger, P H Pretorius, I Ferreira, N Mahatho, On the Electric Field Performance of an Overhead Conductor Real Time Monitoring System (RETMOS II), Paper B-26, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

P H Pretorius, D Muftic, Wild Fire Faults on 765 kV Lines – Modelled Conditions and Electrical Performance, Paper E-54, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

P H Pretorius, C J Semmelink, On the Tower Footing Resistance of Micropile Anchors, Paper G-34, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

P H Pretorius, A A Burger, D Muftic, N Mahatho, On the Application of Advanced Software in Overhead Line Design, Paper B-27, 16<sup>th</sup> International Symposium on High Voltage Engineering, Cape Town, South Africa, 24 - 28 August 2009.

P H Pretorius, R G Stephen, D Muftic, S Sadovic, K Sokolija, Modelling of Overhead Power Line Insulation Using Modern Numerical Tools – Advantages and Limitations in Practical Application, Paper submitted for presentation at the CIGRE Session, Paris, Aug 2010.

P H Pretorius, T Govender, I R Jandrell, J Cebekhulu, G Drake, Numerical and Laboratory Evaluation of a 275 kV GIS Disconnect Switch Failure, Paper submitted for presentation at the 2010 Eskom – Doble Africa Conference on Condition Monitoring and Assessment and its Importance in Utility Asset Management, Eskom Convention Centre, Midrand, South Africa, 17 – 19 August 2010

P H Pretorius, A A Burger, On the Behaviour of the Electric Field Gradient Along the Ground Wire of an  $\pm$  350 kV HVDC Line, CIGRE EMF ELF Symposium, Paris, March 2011.

P H Pretorius, H Troskie, On the Electromagnetic Compatibility of Wind Turbines, AP-MTT-EMC Conference, Stellenbosch, South Africa, Apr 2011.

P H Pretorius, M Dlamini, Improvement of the Performance of a 275 kV Overhead Transmission Line - A Case Study, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, V Munyai, R Nel, Fire Induced Flashovers - Proposed Parameters for Further Research to Improve the Performance of Overhead Transmission Lines, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, W Vosloo, Induced Voltage on the Ground Wire of the Cahora Bassa 533 kV HVDC Line - As Input to the Selection of Ground Wire Insulators, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, S Minhas, R Vajeth, Electromagnetic Coupling Between Circuits of a 500 kV / 132 kV Multi-Circuit Multi-Voltage Transmission Line, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, V Sitholi, On Earth Electrodes of Transmission Lines - Perspectives on Behaviour Under Transient Conditions, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, B Groenewald, On the Electromagnetic Compatibility (EMC) of the Proposed 132 kV Power Infrastructure in Support of the Africa Square Kilometer Array, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, Electrical Phenomena Important to HVAC and HVDC Line Design - Postulates from Exploratory Research, State Grid Corporation of China - Eskom - Trans-Africa Projects Collaborative Symposium, Midrand, South Africa, 5 - 7 Sep 2011.

P H Pretorius, A C Britten, T Govender, N Mahatho, N Parus, J P Reynders, Electric Field Modelling of HVDC Glass Insulators - Preliminary Findings from Insulation Strength Studies, IEEE PES PowerAfrica 2012 Conference and Exhibition, Johannesburg, South Africa, 9 - 13 July 2012.

P H Pretorius, A C Britten, T Govender, K R Hubbard, N Mahatho, N Parus, On the Electromagnetic Interference Associated with the Power Line Carrier System of the Cahora Bassa HVDC Line - A Hypothesis Based on Recent Investigations and Observations, CIGRE Session, Paris, Aug 2012.

B Druif, P H Pretorius, A A Burger, B Haridas, Guideline on Electromagnetic Interference Between Power Lines and Pipelines - A Precursor to NRS 104 and Case Study, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

R Nel, H Vosloo, K Sadurski, P H Pretorius, H Vosloo, Fire Induced Flashovers Associated with HVAC and HVDC Lines - Towards Improved Line Design and Performance, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, A A Burger, R Vajeth, J Calitz, N Mahatho, N Parus, H A Roets, Improvement of Corona Performance on a Double Circuit 400 kV Line - Root Cause Analysis and Case Study, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, A A Burger, D Dukhan, J Calitz, Current Induced Corrosion in Stay Wires of Overhead Power Line Towers, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, S Ramadhin, Failure of a 400 kV Line Ground Wire - Root Cause Analysis and Case Study, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, D W Visser, A A Burger, B Haridass, Safety Considerations Pertained to a 275 kV Overhead Power Line Crossing a School Ground - A Case Study, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, P Goosen, G Bekker, R Vajeth, N Parus, T Govender, Employment of Gold Mines in the Witwatersrand Area as Adjunct to the Establishment of a Deep Level HVDC Earth Electrode, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, C van der Merwe, On the Earthing of Terminal Towers at Substations, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, A A Burger, H Troskie, H M Dlamini, On the Removal of Ground Wires to Correct for Clearance Violations at Transmission Line Crossings, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, N Mahatho, N Parus, T Govender, Numerical Electric Field Analysis of an HVDC Glass Insulator to Better Understand Its Insulation Strength, CIGRE Regional Conference, Somerset West, 7 - 11 Oct 2013.

P H Pretorius, A A Burger, H C van der Merwe, Electric and Magnetic Fields from An Upgraded 132 kV Double Circuit Power Line - A Probabilistic Approach In Field Calculation and Exposure Assessment, Poster presented at BioEM 2014, Cape Town, South Africa, 8 - 13 Jun 2014.

P H Pretorius, Electric Field Coupling from an Overhead Power Line to a Large Refrigerated Truck - A Case Study and Safety Assessment, Poster presented at BioEM 2014, Cape Town, South Africa, 8 - 13 Jun 2014.

P H Pretorius, Cognitive Exploration in Support of Formulating An Hypothesis to Explain Anomalous Flashovers in HVDC Systems, South African Universities Power Engineering Conference (SAUPEC), Johannesburg, 28 - 30 Jan 2015.

P H Pretorius, Apparent Soil Structures Relevant to Buried Earth Electrodes in South Africa - A Research Proposal, South African Universities Power Engineering Conference (SAUPEC), Johannesburg, 28 - 30 Jan 2015.

P H Pretorius, Engineering Perspectives on Soil Properties Important to the Design and Performance of Earth Electrodes at Low and High Frequency, Paper presented at the 19th International Symposium on High Voltage Engineering (ISH 2015), University of West Bohemia, Pilsen, Czech Republic, 23 - 28 August 2015.

P H Pretorius, H J Geldenhuys, Dielectric Telecommunication Lines in High Electric Field Environments – Proposed Solutions to Problems from Field Reports, CIGRE / IEC International Symposium “Development of Electricity Infrastructures in Sub-Saharan Africa”, Somerset West, 26 – 30 October 2015.

P H Pretorius, B Ntshuntsha, S Ramadhin, Application of Counterpoise in the Reduction of Tower Footing Resistance – Low Frequency Design and Case Study, CIGRE / IEC International Symposium “Development of Electricity Infrastructures in Sub-Saharan Africa”, Somerset West, 26 – 30 October 2015.

P H Pretorius, On Tower Footing Resistance Measurement – Observations from Field Experience, Eskom National Conference on Innovations and Challenges for Overhead Lines, Midrand, South Africa, 6 – 8 July 2015.

P H Pretorius, H J Geldenhuys, Dielectric Telecommunication Lines in High Electric Field Environments – Proposed Solutions to Problems from Field Reports, Eskom National Conference on Innovations and Challenges for Overhead Lines, Midrand, South Africa, 6 – 8 July 2015.

P H Pretorius, Engineering Perspectives Important to Electrode Design for Low and High Frequency Performance, Eskom National Conference on Innovations and Challenges for Overhead Lines, Midrand, South Africa, 6 – 8 July 2015.

P H Pretorius, Equipotential as Conceptual Flaw in Large Electrode Design, Eskom Line Engineering Services and Substation Engineering National Conference, Eskom Academy of Learning, Midrand, South Africa, 10 – 14 October 2016.

P H Pretorius, Perspectives on Tower Foot Electrodes – Low Frequency versus High Frequency, Eskom Line Engineering Services and Substation Engineering National Conference, Eskom Academy of Learning, Midrand, South Africa, 10 – 14 October 2016.

P H Pretorius, S van der Merwe, D Visagie, M Mathebula, Safety in Substation Earth Electrode Design – Challenges Posed by Increasing Fault Levels – A Case Study, Eskom Line Engineering Services and Substation Engineering National Conference, Eskom Academy of Learning, Midrand, South Africa, 10 – 14 October 2016.

P H Pretorius, Lightning Damage Associated with Wire Line Technology and Large Electrodes – A Hypothesis, Inaugural Earthing Africa 2017 Symposium and Exhibition, Thaba Eco Hotel, Johannesburg, 5 – 9 Jun 2017.

P H Pretorius, Lightning Risk Assessment Beyond the Ordinary – Application to Renewable Plant, Inaugural Earthing Africa 2017 Symposium and Exhibition, Thaba Eco Hotel, Johannesburg, 5 – 9 Jun 2017.

W van der Merwe, P van der Merwe, P H Pretorius, Electromagnetic Interference from A Large Scale PV Facility Near the SKA Radio Telescope, Inaugural Earthing Africa 2017 Symposium and Exhibition, Thaba Eco Hotel, Johannesburg, 5 – 9 Jun 2017.

P H Pretorius, W van der Merwe, On Electromagnetic Interference from Converters in a Large PV Plant, Inaugural Earthing Africa 2017 Symposium and Exhibition, Thaba Eco Hotel, Johannesburg, 5 – 9 Jun 2017.

P H Pretorius, On Ground Potential Rise Presented by Small and Large Earth Electrodes Under Lightning Conditions, IEEE AFRICON 2017, Victoria and Alfred (V&A) Waterfront Cape Town, South Africa, 18 to 20 September 2017.

P H Pretorius, On Lightning Ground Potential Rise Associated with Large Ground Electrodes, I was invited to present this paper at the 9th Annual Grounding & Lightning Conference, San Antonio, Texas, USA, 3 – 4 October 2017.

P H Pretorius, C R Evert, Elevated Lightning Flash Density at Large PV Plant Environments – A Hypothesis and Preliminary Findings, CIGRE, 8th Southern Africa Regional Conference, Lord Charles Hotel, Somerset West, Cape Town, 14 – 17 Nov 2017.

P H Pretorius, Loss of Equipotential During Lightning Ground Potential Rise on Large Earthing Systems, Joint IEEE International Symposium on Electromagnetic Compatibility & Asia-Pacific Symposium on Electromagnetic Compatibility (2018 Joint IEEE EMC & APEMC), Suntec Convention and Exhibition Centre, Singapore, 14 to 17 May 2018.

P H Pretorius, Behaviour of Surge Protective Devices Under Lightning Ground Potential Rise – Findings from A Desk-Top Study, Joint IEEE International Symposium on Electromagnetic Compatibility & Asia-Pacific Symposium on Electromagnetic Compatibility (2018 Joint IEEE EMC & APEMC), Suntec Convention and Exhibition Centre, Singapore, 14 to 17 May 2018.

H W Siew, P H Pretorius, Large Photovoltaic Systems – EMC Considerations for Safe and Reliable Performance, Presentation to the Power Group of Singapore Power, Suntec Convention and Exhibition Centre, Singapore, 17 May 2018.

P H Pretorius, On *In Situ* Lightning Current Impulse Testing in a Large Free Field PV Plant, 34<sup>th</sup> ICLP Rzeszow, Poland, 2 – 7 Sep 2018.

P H Pretorius, On Earthing of A Large Telescopic Crane During Construction of A Windfarm, South African IEEE Joint AP/MTT/EMC Chapter Conference, Stellenbosch Institute for Advanced Study Conference Centre, Stellenbosch, South Africa, 30 – 31 August 2018.

P H Pretorius, Earthing and Lightning Protection of Utility Scale PV Plant - What is Missing?, SA Energy Storage, SSEG & Smart Grid 2018, Emperors Palace, Johannesburg, South Africa, 22 – 23 October 2018.

P H Pretorius, Dielectric Breakdown Between PV Panel Frames and Structures – A Hypothesis, IEEE 4<sup>th</sup> Global Electromagnetic Compatibility Conference, Stellenbosch Institute for Advanced Study Conference Centre, Stellenbosch, South Africa, 7 to 9 November 2018.

P H Pretorius, Lightning Risk Considerations Related to Wire-Line Technology Applied in Large Utility Scale PV Plant, 9<sup>th</sup> CIGRE Southern Africa Regional Conference, Johannesburg, South Africa, 1 – 4 October 2019.

P H Pretorius, Low Frequency Electric Safety Analysis of A Utility Scale Photovoltaic Plant, 9<sup>th</sup> CIGRE Southern Africa Regional Conference, Johannesburg, South Africa, 1 – 4 October 2019.