



**South African Radio League
Radio Technology in Action Symposium
Eastern Cape
Saturday 20 June 2009
North Campus
Nelson Mandela Metropolitan University\
Building 23 M222**

Amateur Radio: A timeless hobby ■ Science ■ Technology ■ Communication

**Entrance Fee R 50 per person (Learners and Students free)
Includes refreshments , free entry into the attendance
draw and a ticket in a competition for a IC2200H 2m Mobile
Transceiver**

**Attendance
prize
sponsor
ZS2BL**

08:00 Registration



**08:45 Official opening
Prof Andrew Leitch,
Dean of Science
Nelson Mandela Metropolitan University**

**09:00 Amateur Radio not your Granddaddy's radio
What will Amateur Radio of the future look like?**

Rassie Erasmus ZS1YT, President SARL



**09:30 HF Radio Technology in Space Physics
research**

This topic will explore the use of radio technology to probe the atmosphere for science. It will concentrate on the technology aspects of the equipment that is used for scientific discovery, and will feature the Antarctic HF radar and the South African ionosonde as examples of HF radio technology.

Dr Lee-Anne McKinnell
Space Physics Group Hermanus Magnetic
Observatory



10:40 Refreshment break

11:10 Step by step design of a 2m low noise amplifier

A step-by-step practical approach to the design of a low noise amplifier (LNA) for the 2 m amateur frequency band. The LNA was designed for a minimum noise figure (NF) while still achieving a reasonably high power gain. A commonly available Avago Technologies AT-41586 bipolar junction transistor (BJT) was used as the active device in the design and Agilent Technologies state of the art Advanced Design System (ADS) software was used to design and simulate both the DC and AC sections of the amplifier.

Clive V Whaits
Senior lecturer in the department of electrical engineering at
the Cape Peninsula University of Technology.



12:10 Time-domain reflectometry (TDR) and Time-domain transmissometry (TDT)

TDR and TDT are analogous techniques that measure the transmitted (rather than reflected) parameters. Together, they provide a powerful means of analyzing transmission media such as antenna, coaxial cables receivers, filters, baluns, transmitter finals, and connectors. Matching becomes a fact and not an art.

John Willescroft ZS6EF



13:10 Lunch break

Light lunch and refreshment will be served with the compliments of PEARS

14:10 Make satellites your next stop in amateur radio

The presentation will include an introduction to the satellites and terminology, satellites available to the radio Amateur frequencies and modes in use, planning and available software, Internet access to information, Radio equipment and antennas and voice procedure used on satellites

Eddie Leighton ZS6BNE



15:10 Practical application of Spread Spectrum Technology Including the building of a DSSS Transceiver

Spread Spectrum is a technique that takes voice or data and mixes it with a unique digital code that spreads it over a wide frequency range at a level that is below the noise floor. This has the operational advantage of being resistant to interference uses less power and is not observed or creates interference with conventional radio techniques. Another advantage is that a very much larger number of radio stations can use the same radio spectrum and larger data bandwidths are obtainable. At the symposia the focus will be on the practical application of Spread Spectrum Technology Including the building of a DSSS Transceiver

John Willescroft ZS6EF



15:50 Shortwave Listening—is it the forgotten hobby?

At one time Short Wave Listening was a leisure time activity enjoyed by many providing hours of interesting listening and learning experiences. What has changed? Is channel hopping consuming our leisure time? Dust of that old radio, fix up that long wire antenna and experience the magic of listening to the world.

Hans van de Groenendaal ZS6AKV



16:10 wrap up and attendance prize draw

16:30 ends

Attendance Prizes with compliments from Rory Norton ZS2BL

An Iphonix 150/300W DC-AC power inverter



AM-500 DIY wireless burglar alarm.



HAM RADIO OUTLET - SA cc **WHERE RADIO IS A PASSION**

COMPETITION TICKET R20 (Included in R50 entrance fee) Additional Competition Tickets are available at the door at R20

Prize ICOM 2200H Mobile 2 metre Transceiver

