

## **HF RADAR**

As part of the UCT Radar Masters Programme, a special course on High Frequency (HF) Radar will be offered on 16<sup>th</sup> to 20<sup>th</sup> February 2015.

The course will be delivered by the internationally renowned experts in HF Radar Prof. Scott Glenn and Dr. Hugh Roarty of Rutgers University, USA.

The objective of the course on HF Radar is to equip students with a comprehensive overview of the state-of-the-art in HF Radar technology. To accomplish this, technical details of the historical developments in HF radar will be presented to establish the basis for studying modern systems.

The main application focus during the course will HF Radar applied in the Oceanographic domain. However, participants should expect to acquire a thorough appreciation of the general fundamentals of HF Radar relevant to other applications.

The rationale for focusing on HF Radar applied to oceanographic remote sensing is that humans have long been hampered in their ability to sample the world's ocean. This inability to maintain a continuous presence in the ocean is the central problem facing ocean scientists and explorers. Accurate measurements of surface currents are critical for effective Coast Guard search and rescue, harmful algal bloom forecasts, oil spill response and marine navigation.

HF radar is the one instrument that is able to measure the surface currents over a large patch of ocean that can then be used to develop these accurate trajectories. High Frequency radars offer the most cost effective option for measuring the currents off our shores.

### **Curriculum**

Day 1:

- 1) HF radar history and capabilities, Theory, history and planned expansion, future directions (4 hours)
- 2) HF radar hardware, Transmitter, receiver, antenna (4 hours)

Day 2:

- 1) HF Radar case studies (6 hours)
- 2) HF radar installation checklists and procedures (2 hours)

Day 3:

- 1) Site selection and identifying man-made objects that would impact system performance (4 hours)

2) HF radar software (4 hours)

Day 4:

1) Data telemetry (4 hours)

2) Introduction to National and Global HF radar Network and (4 hours)

Day 5:

1) Data visualization (8 hours)