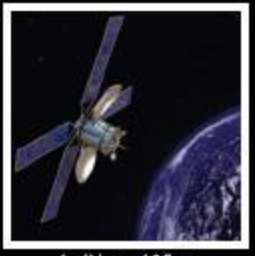
NATURAL ENVIRONMENT RESEARCH COUNCIL

The University of Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

Earth Observation Technology Cluster



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"The world in which we live is a complex system of natural and manmade environments which are evolving all the time. In some cases, even the smallest of variations has the potential to have profound implications for the earth's inhabitants and we need to ensure that the technologies we use to monitor this are keeping pace with these changes"

Dr Aplin, The University of Nottingham

The Earth Observation Technology Cluster brings together a community of academics, industrial partners and public research bodies to promote the understanding, development and uptake of the state-of-the-art technologies used to give us the bigger picture of the earth's changing environments.

This encourages knowledge exchange through a series of seminars, workshops and demonstrations and will culminate in a national Earth Observation conference showcasing the success stories of the network - including future research collaborations and published papers - and the latest gadgets in Earth Observation technology (see website for event details).

Introducing the cluster's five themes:

1. **Low-Altitude Unmanned Aerial Vehicle (UAV) Observation**
   Led by Professor Daniel Donoghue at The University of Durham:
   Helicopters and blimps, balloons and microlites featuring observational technology that allow photography and mapping from the sky to monitor crops, coastal algal blooms and vegetation plus photogrammetry and laser scanning to build 3D computer models of landscapes and geology.

2. **Terrestrial Light Detection and Ranging Knowledge Exchange Network**
   Led by Dr Nicholas Tate at The University of Leicester:
   LiDAR technology offers fast and accurate surveying to produce 3D computer models ranging from the surface of a road to an entire city. Versatile and non-invasive, it offers real time data capture and has a variety of applications including environmental monitoring and modelling in diverse environments ranging from forests to quarries and river beds.

3. **Field-based Fourier Transform Infra-Red Spectroscopy**
   Led by Dr Graham Ferrier at The University of Hull:
   Field FTIR technology uses infrared light to provide information on the composition of rock, sediment, soil vegetation and the atmosphere and has the potential to revolutionise applications of remote sensing to geology and gemorphology plus a number of environmental applications such as monitoring volcanic gas emissions, measuring air quality and identifying contaminated land.

4. **Hyper-Temporal Earth Observation**
   Led by Dr Doreen Boyd of The University of Nottingham and Professor Mark Danson of The University of Salford:
   Made up of the same image captured at regular intervals via satellite to monitor a changing landscape including the effect of global climate change on alterations in plant life growth.

5. **Circumpolar and Cryospheric Earth Observation**
   Led by Allen Pope of the Scott Polar Research Institute at Cambridge:
   A range of earth observation technologies to monitor the cryosphere - the frozen parts of the world including ice sheets, glaciers, ice caps, icebergs and snowfall. Among the technologies are multispectral imagery for monitoring the potential effect of climate change on melting glaciers and laser scanning and image comparisons to track icebergs and predict ice avalanches and other natural hazards.

Further information: **www.eotechcluster.org.uk**

In partnership with

National Centre for Earth Observation

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