# IEEE Advancing Technology for HumanityIEEE New Zealand Central Section

# Notice of Annual General Meeting 2013

**When:** Tuesday, 26 November 2013, commencing at 6pm.

**Where:** James Cook Grand Chancellor Hotel, Level 16, Room Chancellor 3

**Guest Speaker:** Dr Jason McEwen, who is a lecturer in the Mullard Space Science Laboratory at University College London and a Core Team member of the European Space Agency Planck Surveyor satellite mission (see Bio below)

**Topic:** Next-generation radio interferometric imaging with compressive sensing (see abstract below)

**Section AGM:** Commencing at 7pm.

**Agenda**

1. Welcome
2. Apologies
3. Minutes of the 2012 AGM
   1. Matters arising
4. Chair’s Report for 2013
5. Treasurer’s Report for 2013
6. Auditor Resolution
7. Election of Officers for 2013
   1. Chair
   2. Vice Chair
   3. Secretary
   4. Treasurer
   5. Directors
      1. Membership Development
      2. Women in Engineering
      3. Awards Coordination
      4. Industry Coordination
      5. Student Activities Coordination
   6. Co-opted Positions
      1. Webmaster
      2. Others
   7. Committee members
8. Other Business
9. End of formal agenda

**AGM for the Joint Chapter on Communications, Signal Processing and Information Theory (COMM/SP/IT)**

Immediately following the AGM for the IEEE Section, an AGM for the IEEE Joint Chapter on Communications, Signal Processing and Information Theory will be held.

**Refreshments**

**Guest Speaker Details**

**Title:** Next-generation radio interferometric imaging with compressive sensing

**Abstract:**

We are about to enter a new era of radio astronomy with new radio interferometric telescopes under design and construction, such as the Square Kilometre Array (SKA). While such telescopes would provide many scientific opportunities, they must first overcome tremendous data processing challenges. Novel imaging algorithms will be required to overcome these challenges. The theory of compressive sensing is a recent, revolutionary development in the field of information theory, which goes beyond the standard Nyquist-Shannon sampling theorem by exploiting the sparsity of natural images. Compressive sensing provides a powerful framework for solving linear inverse problems, such as recovering images from the incomplete Fourier measurements taken by radio interferometric telescopes.  I will present recent developments in compressive sensing techniques for radio interferometric imaging, which have shown a great deal of promise. These techniques promise improved image fidelity, flexibility and computation time over traditional approaches.  I will also present the recently released PURIFY code, an open source code for the application of these techniques to realistic radio interferometric data.

**Bio:**

Jason McEwen is a lecturer in the Mullard Space Science Laboratory at University College London and a Core Team member of the European Space Agency Planck Surveyor satellite mission.  After graduating with a B.E. (Hons) in Electrical and Electronic Engineering from the University of Canterbury in 2002, he completed a Ph.D. in Astrophysics at the University of Cambridge in 2006.  Following his Ph.D. he held a Research Fellowship at Clare College, Cambridge, before working as a Quantitative Analyst at Credit Suisse.  He then held a position as a Scientist at Ecole Polytechnique Federale de Lausanne, Switzerland, followed by a Leverhulme Trust Early Career Fellowship and then a Newton International Fellowship, both at University College London.  His research interests are focused on astroinformatics, combing his interest in signal processing, including sampling theory, wavelet theory, compressed sensing and Bayesian statistics, with applications in cosmology and radio interferometry.