



## Theoretical Studies of Scattering, Structure, Dynamics and Imaging in Electronic Systems

A workshop held jointly by the Theory Groups of  
ARC Centre for Coherent X-ray Science (CXs)  
ARC Centre for Antimatter-Matter Studies (CAMS)  
Theoretical Condensed Matter Physics, UoM (TCMP)

School of Physics  
Room 211, Physics Podium  
The University of Melbourne  
Monday 28 May 2007

### PROGRAMME

- 09:00 Keith Nugent, (Director, CXs): Coherent X-ray Science  
09:20 Igor Bray (Deputy Director, CAMS): Antimatter-Matter Studies  
09:40 Les Allen (TCMP): Atomic resolution imaging  
10:10 Andris Stelbovics and Philip Bartlett (CAMS): Exterior complex scaling approach to electron-atom scattering  
  
10:40 COFFEE  
  
11:10 Igor Bray (CAMS): The convergent close coupling approach to atomic collisions  
11:40 Scott Findlay (TCMP): High-energy inelastic electron scattering in condensed matter  
12:00 Andrew Martin (TCMP): Phase Imaging of a gold-vacuum interface  
12:20 Tim Gureyev (CXs): Survey of phase retrieval methods in X-ray imaging and tomography  
12:40 Anatoli Kheifets (CAMS): Close-coupling approach to single and double photoionisation of atoms  
  
13:00 LUNCH  
  
14:00 Harry Quiney (CXs): Molecular electronic structure, electrodynamics, and imaging  
14:30 Olena Ponomarenko (CXs): Quantum Dynamical simulations of high harmonic generation in small molecules  
14:50 Dmitry Fursa (CAMS): Fully relativistic approach to electron-atom collisions  
15:10 Andrey Lugovskoy (CAMS): Attosecond laser pulse interactions with Rydberg atoms  
  
15:30 COFFEE  
  
16:00 Feng Wang (Swinburne): Information from both sides of the coin: application of EMS to study biomolecules  
16:20 Alisher Kadyrov (CAMS): Formal ionisation theory for Coulomb three-body problems  
16:40 Group Discussion  
  
17:30 CLOSE