Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Characterisation of the CDW in the novel superconducting family Na2Ti2X2O[1] ANDREW PRINCEP, LIAM GANNON, YANFENG GUO, ROGER JOHNSON, ANDREW BOOTHROYD, University of Oxford, HARRIOTT NOWELL, Diamond Light Source, UK, PETER BAKER, ISIS Facility, UK, XIA WANG, YOGUO SHI, Institute of Physics, Beijing — There have been a variety of predictions for the origin of the density wave (DW) order that exists in the layered titanium oxy-pnictide superconductors Na2Ti2X2O (X = As, Sb), primarily focusing on a scenario where Fermi surface nesting results in an incommensurate spin-density wave. Here, we show using a combination of muon spin-rotation and synchrotron x-ray diffraction, that the density wave order in these materials is in fact a commensurate charge density wave. We will elaborate on the details of the accompanying structural distortion, and discuss some of the implications of this result in the context of the cuprate and iron pnictide superconductors.

[1]Supported by EPSRC grant EP/J017124/1

Andrew Princep
University of Oxford

Date submitted: 14 Nov 2014 Electronic form version 1.4