



**SPEAKER:** Alfons Weber (STFC/RAL & Uni Oxford)  
**TITLE:** **First Anti-neutrino Oscillation Results from the T2K Experiment**  
**DATE:** Tue 08/09/2015 11:00  
**PLACE:** Council Chamber

## ABSTRACT

Neutrinos are the some of the most abundant but yet most elusive particles in the universe. They have almost no mass, only interact weakly and relatively little is known about their properties. Furthermore it has been firmly established over the last decade that neutrinos can undergo flavour transitions as mass and flavor eigenstates are not identical. These neutrino oscillations have been studied using natural sources as well as nuclear reactors or with neutrinos produced at accelerators

T2K is a long baseline neutrino oscillation beam that uses a beam of muon (anti-)neutrinos that is directed from J-PARC at the east coast of Japan over a distance of almost 300 km to the SuperKamiokande water Cherenkov detector in the west. The facility is complemented by a near detector complex 280 m downstream of the neutrino production target to characterise the beam and the neutrino interaction dynamics. T2K has taken data with a muon neutrino beam since early 2010 and is studying the disappearance of muon neutrinos as well as making the most precise measurements of electron neutrino appearance

This seminar will give an overview of the experimental program of T2K concentrating on the result obtained in the more recent anti-neutrino run that started in summer 2014