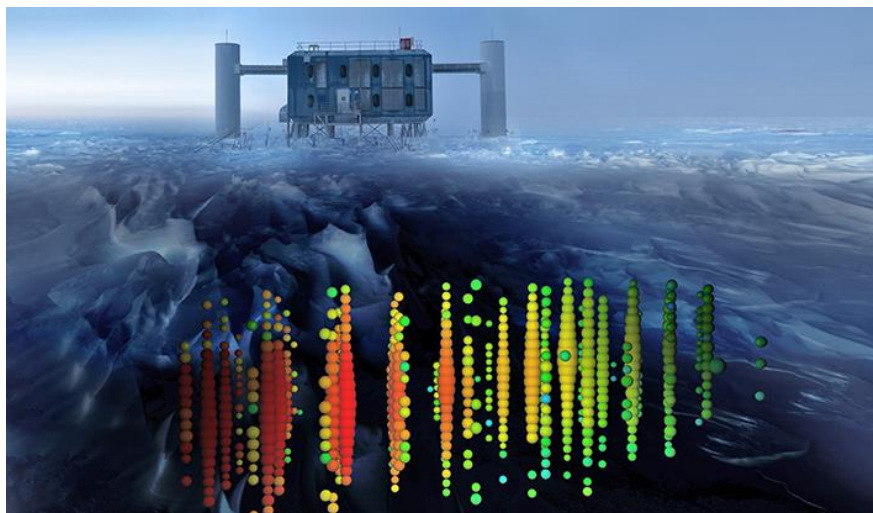


Café Scientifique Headingley

Monday 14th November 2016 at 7:30pm

Speaker: Alan Watson

Title: Detection of Astrophysical Neutrinos at the South Pole



Outline:

In 2013 one of the highlights of the astrophysical year was the detection of high-energy neutrinos that come from outside our atmosphere. This discovery was made using an instrument called IceCube, which is a cubic kilometre of ice at the South Pole instrumented with photomultipliers. In the talk I will first explain what a neutrino is (nearly a trillion pass through your hand every second!), describe the various ways in which they are created, and why it is interesting, in an astrophysical context, to search for them. I will then describe the construction and operation of the remarkable detector at the South Pole and explain why detecting high-energy neutrinos is of interest in the context of searching for the origin of cosmic rays.

Biog: Alan Watson is an experimental physicist who has studied cosmic rays for over 50 years at field stations in the UK, Antarctica, Arizona and Argentina, with the goal of discovering the origin of the highest-energy particles. At the South Pole, with an American group, his Leeds team built a detector to search for gamma-rays from SN1987a and worked with scientists from Wisconsin and California who were building the prototype of the IceCube detector. In 1991, with Jim Cronin (University of Chicago), he conceived the idea of the Pierre Auger Observatory, a cosmic ray detector that covers 3000 km² in Western Argentina and which has been operational since 2004. With it, the best data on the highest-energy cosmic-rays have been obtained. He began working at the University of Leeds in 1964 taking up research on cosmic rays. He is an Emeritus Professor of Physics at the University of Leeds (since 2003), Emeritus Spokesperson of the Pierre Auger Observatory (since 2007) and a Fellow of the Royal Society (elected 2000).

Venue: The New Headingley Club 56 St Michael's Rd., Leeds LS6 3BG

Time: Club opens at 7:00pm for drinks & the room at 7:30; talk begins promptly at 7:45pm

Entry: Donation please for room hire and expenses: **£3 at the door**



Café Scientifique Headingley is a programme run under the auspices of the Headingley Development Trust www.headingleydevelopmenttrust.org.uk