GLASGOW PUBLIC LECTURE SERIES

Organised by the Institute of Physics in Scotland

in collaboration with the

British Science Association and Glasgow University Physoc

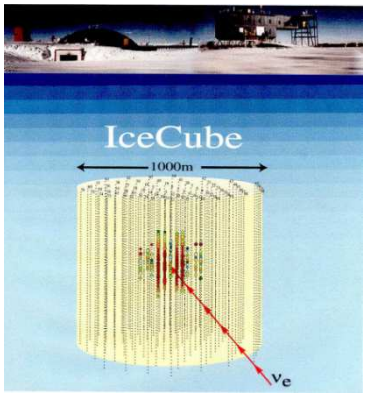
United Nations Educational, Scientific and Cultural Organization

International Year of Light 2015

Autumn 2015 Lectures

Thursday October 22nd — Prof Paul Soler (University of Glasgow)

Neutrinos: messengers from space



Neutrinos are some of the most mysterious of elementary particles. In this talk I will discuss the birth of the neutrino as an idea, its discovery as a fundamental particle, how neutrinos are ubiquitous in the universe and how they spontaneously change in flight (neutrino oscillations). Neutrinos are found as remnants of the nuclear reactions that power our sun, are encountered as by-products from cosmic rays and are responsible for carrying away 99% of the energy of supernova explosions. In commemoration of the international year of light, I will show how evidence for neutrinos is found through the observation of faint flashes of Cherenkov light in super-massive detectors. The Ice Cube detector in the South Pole, which instruments 1 cubic kilometre of the Antarctic ice, recently demonstrated evidence for extra-galactic neutrinos, with energies that dwarf the energies achieved at the Large Hadron Collider. This discovery opens up a new way at looking at the universe: neutrino astronomy.

Thursday November 19th — Dr Douglas Pritchard (Heriot-Watt University)

Documenting the Built Environment: Using lasers to 3-dimensionally scan the Cologne Cathedral World Heritage Site

International heritage sites face a variety of man-made threats, from global warming and air pollution to urban encroachment and the pressures of increased tourism. The recent iconoclastic destruction of Palmyra or the vandalism of historic religious monuments in Iraq are an immense loss to the region as well as to the international community. Unfortunately, the Middle East is not alone with this problem, looting and intentional damage of universally valued cultural heritage is a significant global problem.

In light of these concerns, there is a critical need for techniques and systems that can effectively digitally preserve monuments and sites before they are irretrievably damaged or destroyed. Using previous projects at Durham Cathedral and Cologne Cathedral as case-studies, the presentation will focus on the use of highly precise documentation systems such as the terrestrial laser scanner and custom-designed rigs, to precisely capture complex architecture forms a virtually preserve them for future generations.

Thursday December 17th — Janet Milne (University of Strathclyde)

Lighting the future: brighter, smaller, faster

Solid state LEDs are revolutionising the lighting industry and are now considered by some to be the future of wireless communications. This event will discuss the development of LEDs for lighting, their benefits and limitations, and current research that is developing both the lighting and communications potential of these versatile and energy efficient light sources.

Visit our website at
http://www.tinyurl.com/glasgow-iop/

How to find us

The School of Physics and Astronomy is in the Kelvin Building, on the main University Campus. Pedestrians can enter the Campus via the Main Gate or the Botany Gate. Parking is available in University Place or (via Main Gate entry to Campus) around the Kelvin Building itself.

More travel information can be found via the link on our website: http://www.tinyurl.com/glasgow-iop/