The Australian Institute of Physics
Tasmanian Branch

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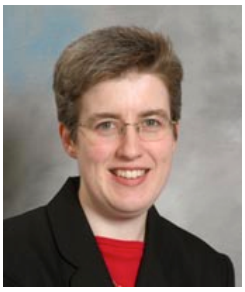
The 2010 Women in Physics Lecture Series

Black holes at the Large Hadron Collider

national science week



Professor Elizabeth Winstanley

Department of Applied Mathematics ,
University of Sheffield, UK

Wednesday, 11 August 2010, 8PM

Physics Lecture Theatre 1
Sandy Bay Campus, University of Tasmania

ABSTRACT:

Brane world models in string theory suggest that our universe is a slice, or 'brane', of a higher-dimensional space-time. In this talk we will discuss why one consequence of these models is that copious numbers of mini black holes may be formed by collisions at the Large Hadron Collider (LHC) at CERN. We will describe how these mini black holes are created, and what happens to them once they have been produced. In particular, we discuss why these black holes will not swallow up the entire Earth.

SPEAKER PROFILE:

Elizabeth Winstanley obtained a MA in mathematics and completed a DPhil in theoretical physics in 1996 at Oxford University . After her doctoral studies, she was appointed as Fellow and Lecturer in Applied Mathematics at Oriel College, Oxford University, teaching a wide range of mathematics and theoretical physics courses. In September 2000, she was appointed as a Lecturer in the Department of Applied Mathematics at the University of Sheffield, where she has worked ever since. She has worked her way up the academic ladder at Sheffield, and was promoted to Professor of Mathematical Physics in January 2009.

Professor Winstanley's research interests lie in general relativity, quantum gravity and quantum field theory in curved space-time. Her research focuses on the physics of black holes, particularly `hairy'' (and more recently, `furry'') black holes in general relativity and the Hawking radiation of black holes as might be produced at the Large Hadron Collider at CERN in Switzerland. She maintains a keen interest in developments in mathematics and science education, serving on a number of national mathematics education committees in the UK. She is a past-chair of the Gravitational Physics Group of the UK Institute of Physics and has recently been a member of the Council of the London Mathematical Society, the UK's learned society for mathematics. Apart from physics, she enjoys watching sport, particularly cricket and rugby league, and has a broad taste in music, everything from Rachmaninov to Radiohead.

The Australian Institute of Physics International Women in Physics Lecture Series was instituted to celebrate the contribution of women to advances in physics. Under this scheme, a woman who has made a significant contribution in a field of physics will give a series of lectures around Australia, including a Public Lecture arranged by each participating branch of the AIP. The Lecture will be of interest to a non-specialist physics audience and is expected to increase awareness among students and their families of the possibilities offered by continuing to study physics.

ALL WELCOME