MONASH University
School of Physics and Astronomy

PUBLIC LECTURE

Tying Electrons into Knots: The New Science of Topological Materials

PROF. MICHAEL FUHRER

Until recently it was thought that every material could be classified into one of two types: metals, which conduct electricity, and insulators, which don't. Recently physicists proposed and then discovered a new type: topological insulators, which are insulating in their interior but conduct along their surfaces or edges, a discovery which was recognised by the 2016 Nobel Prize in Physics. I will describe why quantum mechanics makes some materials metals and others insulators, and try to convey how topology makes some insulators different from others. I will also talk about the important role that new topological materials may play in reducing the energy used in computing devices.

ABOUT THE SPEAKER:

Professor Michael Fuhrer is an ARC Laureate Fellow in the School of Physics & Astronomy at Monash University. Michael directs the ARC Centre of Excellence for Future Low-Energy Electronics Technologies (FLEET) and co-directs the Monash Centre for Atromically Thin Materials. Prior to coming to Monash, Michael directed the Center for Nanophysics and Advanced Materials at the University of Maryland. Michael is a Fellow of the American Association for the Advancement of Science and the American Physical Society.

DATE: Tuesday 28 August 2018

TIME: Activity: 6:30PM, Lecture: 6:50PM

VENUE: Theatre S3
16 Rainforest Walk
Monash, Clayton

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