



Lakehead
UNIVERSITY

**Faculty of
Science and
Environmental Studies**

***Colliding Black Holes and Gravitational Waves:
Seeing the Universe Through
Fantastic Messengers***

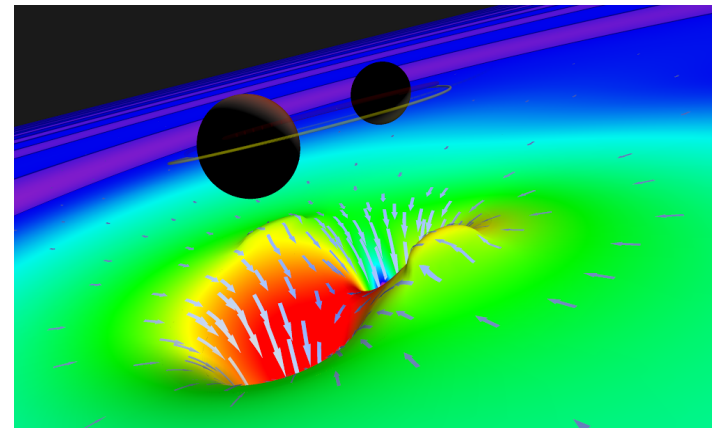


Dr. Harald Pfeiffer

**Associate Professor and Canada Research Chair in
Numerical Relativity and Gravitational Wave
Astronomy,
Canadian Institute for Theoretical Astrophysics**

One hundred and one years ago, Albert Einstein put forth ideas that led to two astonishing predictions. The first was black holes, regions of space with such intense gravity that nothing can escape, not even light or the strongest rockets. The second was gravitational waves, the tiniest ripples in space and time traveling through the Universe.

Just one year ago these fantastic ideas were confirmed by the first observations of gravitational waves created by colliding black holes.



In this talk, Dr. Pfeiffer will introduce black holes and gravitational waves. He will then trace the story of the remarkable first gravitational wave discoveries, and explain how gravitational waves are used to explore our Universe.

Dr. Harald Pfeiffer studied in Germany and the UK before obtaining his PhD from Cornell University in 2003. He performed postdoctoral research at CalTech and in 2009 joined CITA at the University of Toronto. He is a Fellow of the Canadian Institute of Advanced Research, has received a Bessel Award of the Humboldt Foundation; he has shared in the Gruber Cosmology Prize and the Special Breakthrough Prize in Fundamental Physics for the discovery of gravitational waves.

Dr. Pfeiffer performs supercomputer calculations to study black holes and Einstein's theory of General Relativity. Using these calculations he searches for gravitational waves with the LIGO gravitational wave detectors, and deciphers what such waves tell us about black holes, our Universe, and the behaviour of gravity in the most extreme circumstances.

**Tuesday Oct. 4th 2016
7:30 pm to 8:30 pm
Lakehead University, ATAC 1003**



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