



PHYSICS AND ASTRONOMY COLLOQUIUM

Kendrick Smith

Perimeter Institute, Waterloo

“Transient Searches in CHIME and other Next-Generation Radio Telescopes”

Abstract

In the next few years, radio telescopes will be built with mapping speeds hundreds of times higher than existing instruments. This has the potential to revolutionize transient radio astronomy. Some future milestones include solving the astrophysical mystery of fast radio bursts, improved tests of general relativity through discovery of new pulsar systems, and detection of nanohertz gravitational waves through large-scale pulsar timing. Realizing the potential of these instruments requires developing new algorithms, and I'll talk about some of our recent algorithmic research. This work was mostly done in the context of the Canadian Hydrogen Intensity Mapping Experiment (CHIME) but the talk will be more general.