

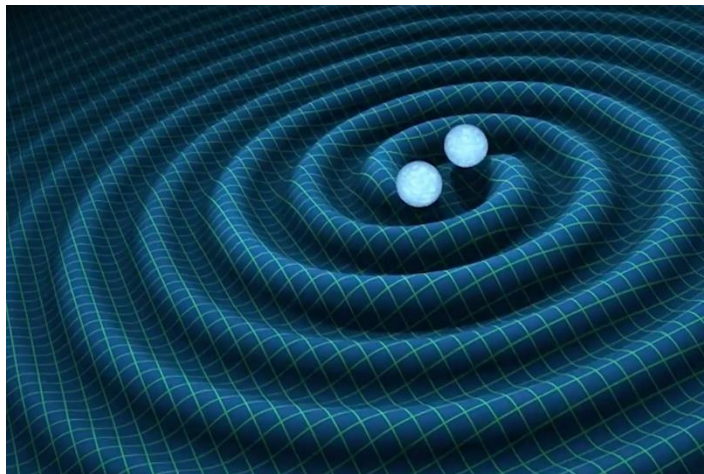
Graduate Math and Physics Seminar

How do we capture more gravitational wave events from Earth?

Dr. Brittany Kamai
California Institute of Technology

Abstract: LIGO, a ground-based gravitational wave detector, has enabled the discovery of distortions in space-time generated from extreme astrophysical events, such as when two black holes merge into one another. These signals are so small that it requires building intricate machines to reach unprecedented sensitivity in length measurements.

In this talk, I will discuss how these detectors work and what is on the horizon for improving them. I will focus on a proposed major cryogenic upgrade that will utilize new silicon optics and the R&D involved for full-scale implementation. Additionally, I will discuss ideas for a passive seismic isolation system that uses advances in seismic meta-materials. This will improve detector sensitivity and extend measurements from within our local universe out to much further back in cosmological time.



When: Monday, February 11, 2019, 6:00 – 7:00 pm

Where: CSUCI, Sierra Hall 2411

One University Drive, Camarillo, California 93012-8599 Tel: (805) 437-8967 Fax: (805) 437-8864 www.csuci.edu