University of Wisconsin-Milwaukee

Dept. of Physics
COLLOQUIUM

Optimizing Advanced LIGO's Scientific Output with Fast, Accurate, Clean Calibration

Aaron Daniel Viets

PhD Candidate -- UWM Physics

Friday, 5 April 2019

3:30 PM (coffee/cookies at 3:15 PM)

<u>Lapham Hall – Room 160</u>

Fast, accurate calibration of Advanced LIGO data is an essential part of gravitational-wave astronomy, necessary for prompt electromagnetic follow-up of gravitational-wave events and reliable estimation of source parameters.

I will discuss methods used in both low and high latency to produce the calibrated strain signal $h(t)$. I will highlight recent improvements that have been made to improve the calibration process during and after the second observing run. These include the application of frequency-dependent corrections to the calibration using adaptive filters, reduction in calibration latency, and the subtraction of excess noise from $h(t)$ in low latency.

UNIVERSITY of WISCONSIN
UWMILWAUKEE