

Eric G. Oelker

Graduate Institution: Massachusetts Institute of Technology

Graduate Discipline: Physics

Hometown: San Luis Obispo, CA

Relevant SC Research: Basic Energy Sciences



Research Interest:

I am interested in quantum measurement and its applications in Gravitational Wave Astronomy and Quantum Optomechanics. Our group specializes in developing hardware needed to implement quantum non-demolition measurement techniques for the Advanced Laser Interferometer Gravitational Wave Observatory (aLIGO), as well as low frequency quantum optomechanics. These areas overlap with several traditional areas of Atomic, Molecular, and Optical Physics. In particular, we specialize in the generation and utilization of squeezed vacuum.

In general, I like research which seeks to utilize concepts and techniques from AMO physics for the purpose of performing precision measurements.

About Me:

I am currently enrolled in the Physics PhD. program at MIT. I am a third year graduate student and hope to finish in 2015. I am currently working at the MIT LIGO laboratory and am a member of the LIGO scientific collaboration. I am very interested in Gravitational Wave Astronomy as well as Quantum Measurement. My Research is focused on understanding and manipulating

quantum noise in low frequency optomechanical systems. Developing this understanding is an important step towards designing next generation detectors which will operate at or below the Standard Quantum Limit.

I hope to continue working with LIGO, or another gravitational wave detector collaboration, either as a staff research scientist at one of the research and development laboratories or observatories or as a faculty member at a participating university.

In my spare time, I enjoy watching and playing basketball as well as brewing my own beer.



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