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Teaching Gravitational-Wave Astronomy in the Undergraduate Laboratory

The first detection of gravitational waves by the Laser Interferometer Gravitational-Wave Observatory (LIGO) in September 2015 ushered in a new era of astronomy. But few undergraduate labs address the complexities of the LIGO detector beyond demonstration of the simple Michelson interferometer. In this talk I will introduce a series of increasingly sophisticated lab activities designed to teach how LIGO improves upon the basic Michelson, focused mainly on the sensitivity increase and controls problem associated with folding the interferometer arms.