

Abstract Submitted  
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**Electro-Optic Surface Effects in Rubidium Titanyl Phosphate (RTP)** CHRISTOPHER L. MUELLER, DANIEL AMARIUTEI, MUZAMIL ARAIN, GUIDO MUELLER, DAVID REITZE, DAVID TANNERR, University of Florida, LIGO COLLABORATION — The Laser Interferometer Gravitational Wave Observatory (LIGO) is a ground based gravitational wave telescope which utilizes a Michelson interferometer design to detect the differential changes in length caused by passing gravitational waves. Multiple resonant cavities were added to the interferometer design in order to increase power circulating in the interferometer, and thereby decrease noise. Resonant cavities, however, are very sensitive to alignment and hence can introduce a new source of noise into the interferometer output channel. As a risk reduction experiment, we developed an active cavity alignment system using textbook electro-optic RTP prisms which should theoretically be able to suppress noise into the high MHz regime. During initial testing of the prisms it was discovered that both the amount and direction of the deflection induced by an applied electric field vary strongly over the surface of the prism. This talk will describe the subsequent investigations into the nature of these inhomogeneities.

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