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High Speed Alignment Control of an Optical Resonator[1] DANIEL AMARIUTEI, Univ of Florida - Gainesville, UF LIGO GROUP TEAM — For interferometric gravitational wave detectors, fluctuations in the input laser beam alignment are a critical source of technical noise. In order to maintain optimal sensitivity it is necessary to control the input beam alignment. We introduce a new method for achieving this alignment control using angular actuators based on the electro-optic beam deflection. Compared to piezo-mounted mirror actuators, which have a low bandwidth and intrinsic noise due to moving parts, these actuators promise a much higher bandwidth with no moving parts. This talk presents the experimental demonstration of closed loop alignment control using the electro-optic beam deflectors and report their measured performance.

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