Abstract Submitted
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Discharging Fused Silica Optics Occluded by an Electrostatic Drive[1] DENNIS UGOLINI, Trinity University — Charge accumulation on test masses is a potentially limiting noise source for gravitational-wave interferometers, and may occur due to exposure to an electrostatic drive (ESD) in modern test mass suspensions. In this talk I will show that an ESD can cause charge accumulation on a fused silica test mass at a rate of $8 * 10^{-16}$ C/cm^2/hr. I will also describe a charge mitigation system consisting of a stream of nitrogen ionized by copper feedthrough pins at 3750 VAC. This system can neutralize positive and negative charge from 10^{-11} C/cm^2 to $3 * 10^{-14}$ C/cm^2 in under two hours.

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