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## Compact low-frequency optomechanical accelerometers for GW detectors

We will report our progress on the development of our compact low-frequency optomechanical accelerometers, which consist of monolithically fabricated mechanical resonators that are read out by miniaturized heterodyne laser interferometers. The resonators are made of fused-silica, with a test mass of approximately 2.5 grams and a mechanical quality factor of  $4.77 \times 10^5$  at 4.7 Hz.

We have conducted comparison measurements with a commercial low-frequency seismometer to an excellent agreement, the Nanometrics T120 Horizon. A benchtop prototype exhibits measured noise floors in the order of 82 pico-g/ $\sqrt{\text{Hz}}$  at 0.4 Hz in our laboratory.

We will present recent updates on this optomechanical accelerometer, including up to date measurements of the resonator and interferometer sensitivity, as well as that of the combined system.

**Primary author:** GUZMAN, Felipe (Texas A&M University)

**Presenter:** GUZMAN, Felipe (Texas A&M University)

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