

Abstract Submitted  
for the 4CS19 Meeting of  
The American Physical Society

**Interference Pattern Structured Illumination Imaging Using Acoustical Waves**<sup>1</sup> CAYMAN ROGERS, DALLIN DURFEE, None — Having accomplished structured illumination imaging using the interference pattern of two light waves, our research team would like to take the technique a step further and use sound waves as the source of the initial signal. Much like the use of two light waves, the idea behind this experiment is to project an interference pattern onto an object and use information from the transmission signal to reconstruct the image. The spacial frequency of the fringe pattern may be altered by changing the frequencies of the two speakers. In doing this a number of times, with a wide array of large and small frequencies, one can theoretically create an intelligible signal to produce a sharp image of the one-dimensional object. While we have not yet succeeded in creating this image, there is a lot of potential in this idea and we plan to continue refining our technique in order to provide a clear one-dimensional and, eventually, a two-dimensional image.

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None

Date submitted: 18 Sep 2019

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