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Oral Presentation O8.2

CONSTRUCTION OF AN ELECTRONIC SPECKLE PATTERN INTERFEROMETER

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Electronic speckle pattern interferometry is used to look at the operating deflection shapes of vibrating objects. An effort has been made to make this technology more accessible by using lower cost components and perfecting current methodology. It has been shown that by using an inexpensive firewire camera and a 100mW laser that interference patterns of a center mounted circular steel plate can be observed through a range of drive amplitudes and frequencies. The images obtained have been improved using an image averaging technique implemented through LabView. Image quality has also been improved by implementing a piezo driven mirror that was simply constructed at IWU. Also discussed will be other techniques for improving image quality.