

CSAAPT Spring 2023 Semi-Virtual Meeting



Chesapeake Section of the
American Association of Physics Teachers
Spring 2023 Semi-Virtual Meeting
April 1, 2023 @ **JAMES MADISON UNIVERSITY**

Contribution ID: 23

Type: **demo (15-minute)**

Demonstration of Schlieren Imaging

Saturday, April 1, 2023 1:30 PM (15 minutes)

The schlieren and shadowgraph techniques allow one to observe otherwise invisible phenomena in transparent gas, liquid or solid materials. These optical methods are very sensitive to changes in the refractive index of the media under observation. For example, the variations in air density in the convection plume of a candle's flame results in an impressive display of laminar and turbulent fluid flow. Thermal gradients can also be seen coming off a person's hand. The schlieren and shadowgraph techniques will be explained and demonstrated using a single mirror optics setup.

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Session Classification: Afternoon Session 1B