

Abstract Submitted
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New applications of focusing schlieren imaging MICHAEL HARGATHER, STEWART YOUNGBLOOD, New Mexico Tech — Focusing schlieren is a refractive imaging technique that visualizes refractive disturbances in a limited depth of field. Whereas traditional schlieren visualizes refractive disturbances along an entire optical path, focusing schlieren can be used to see inside of a refractive flow or to eliminate disturbances outside of a defined test section. The basic optical layout and design of a focusing schlieren system are reviewed. Comparisons between traditional schlieren and focusing schlieren images are presented to highlight the ability to selectively image refractive disturbances. The imaging technique is applied to measuring quantitative density fields with low- and high-speed applications. Additional applications to refractive feature tracking and schlieren image velocimetry are presented.

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