

Abstract Submitted
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Schlieren and shadowgraph techniques for fluid physics experiments – a brief tutorial GARY SETTLES, Penn State University — Schlieren and shadowgraph techniques are often and broadly applied to the types of flows reported at APS DFD meetings. The simplest optics usually suffice to reveal the strong refractions generated by gas-liquid interfaces, drops, bubbles, and the like. Only rarely is the exquisite sensitivity potential of the schlieren method invoked, while the low-sensitivity background-distortion schlieren method is used more often. Nonetheless there are pitfalls in applying these optical techniques: loss of information from over-ranging due to the tradeoff between sensitivity and measuring range, the inadvertent appearance of schlieren cutoff in an otherwise-pure shadowgram, etc. In some cases the fact that the visualization of a phenomenon is grounded in either schlieren or shadowgraphy is not even recognized. These issues are surveyed and example images are shown.

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