Abstract Submitted
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Flow Visualization for K-12 Outreach JEAN HERTZBERG, University of Colorado — The talk will begin with an introduction to the minisymposium, including the context of physics education research. One component of fluids education is K-12 outreach. Fluid mechanics is rarely emphasized in K-12 curricula, with the exception of lift and drag, buoyancy, and some Earth Science related physics. Thus care must be taken when creating outreach activities to ensure relevance. For example, curricula are increasingly defined in terms of state science standards, so outreach activities will be more successful if they address local standards explicitly. Other considerations include keeping equipment costs low, ensuring materials are safe and available, providing continuing education credits for participating teachers, emphasizing hands-on activities, incorporating quantitative aspects, as well as assessment of student learning, etc. Flow visualization activities are well-suited to the needs of K-12 outreach, for both formal and informal science education. A wide range of flow physics can be demonstrated with minimal equipment and non-toxic fluids, including basic fluids concepts which are not typical in K-12 curricula such as laminar vs. turbulent flow, vortex dynamics, and instability. The challenge is to devise activities that are both directly related to science standards and are interesting enough to inspire the next generation. Several activities which have been developed in conjunction with a unique course "Flow Visualization: the Physics and Art of Fluid Flow" will be described.

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