

Euler singularities and their relation to experimental fluid flows

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Abstract: This talk will be a broadside of strongly nonlinear fluid flows: jets, cones, drips, shears, and vortices. How can advances in our understanding of the mathematics of partial differential equations help us to parse these violent phenomena? This connection is relatively easy to make for isolated structures - but connecting it to self-affine fields observed in turbulence is a challenge. Some suggestions to how applied mathematics, numerics and experiments can jointly advance this will be discussed, while giving a cross-section of experimental results on diverse flows.