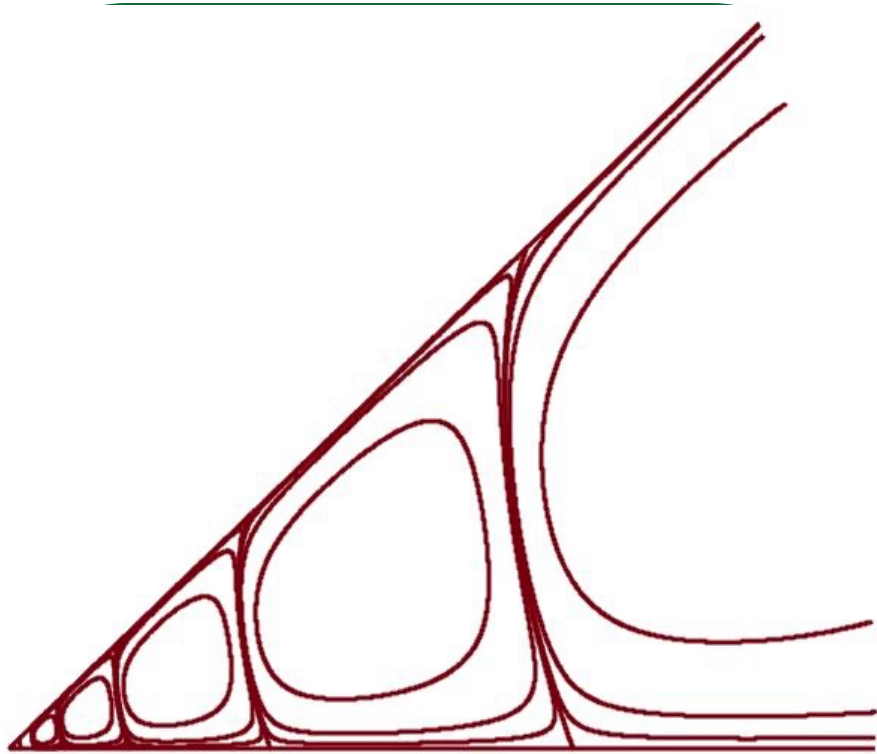


Interfacial Implications of odd viscosity



Odd viscosity squeezes and decreases the size and intensity of Moffatt vortices in a viscous liquid at a corner with one free surface

["Odd viscosity-induced passivation of Moffatt vortices"](#)

Journal of Fluid Mechanics, **950**: A19, (2022) E. Kirkinis, J. Mason, and M. Olvera de la Cruz

Scientific Achievement

Odd viscosity passivizes Moffatt vortices, decreasing their size and reducing their intensity by creating a normal-stress-induced shear stress at the liquid-gas interface. Odd viscosity shows a tendency to moderate singular behavior in corner flows with a free surface

Significance and Impact

Moffatt vortices can now be observed with greater facility in an experiment and find applications in the viscous regime of electron fluids and intervortex interactions of a dense vortex system

Research Details

- Obtained rare closed-form solutions for free-surface flows
- The odd viscosity-induced shear stress is out-of-phase and oppositely directed with respect to the interfacial liquid velocity
- Odd viscosity increases the range of corner angles over which Moffatt vortices can be observed



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