

# Mixing and enhanced dissipation in incompressible flows

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## Abstract

I will discuss measure of mixing in incompressible flows and give examples of flows that achieve the optimal rate of mixing [1]. I will then give two applications, one to complete, instantaneous loss of regularity in linear transport equations [2, 4], the other to enhanced dissipation and consequences. In particular, I will show that adding a linear advection term leads to global existence for the 2D Kuramoto-Sivashinsky equation, a model of front propagation in combustion [3, 5].

## References

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