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A Yang-Mills Approach for Conformal Invariance in Turbulence
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The relationship between conformal symmetry and stochastic processes has been a rapidly growing field over the last twenty years. Among other applications, this pairing was used to suggest the presence of conformal invariance in two-dimensional turbulence via numerical methods. We present a theoretical approach to realize this correlation for an incompressible fluid of the same dimension using techniques from Yang-Mills theory with a non-Abelian gauge group. In doing so, we also provide a new explanation for behavior near zero-vorticity lines.

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