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Geometry of 3D turbulent flows and the scaling gap in the 3D Navier-Stokes regularity problem

We show that the scaling gap in the 3D Navier-Stokes equation regularity problem can be reduced by an *algebraic factor*. All preexisting improvements have been logarithmic in nature, regardless of the functional set up utilized. This result is inspired by the geometry of the regions of intense vorticity observed in computational simulations of 3D turbulent flows.