

Review of: "Quantum Solution of Classical Turbulence. Decaying Energy Spectrum"

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Potential competing interests: No potential competing interests to declare.

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This work has consider the problem of decaying turbulence in the NavierStokes equations in $3 + 1$ dimensions into a Number Theory challenge: ffinding the statistical limit of the Euler ensemble. And the authors obtain an analytic formula for the observable energy spectrum—a complete solution of decaying turbulence derived entirely from first principles without the need for approximations or ftted dimensionless parameters. The analysis reveals the full spectrum of critical indices in the velocity correlation function in coordinate space, determined by the poles of the Mellin transform, which we prove to be a meromorphic function. Real and complex poles are identified, with the complex poles reffecting dissipation and uniquely determined by the famous complex zeros of the Riemann zeta function.

This article has the following minor problems, which I suggest to accept after modification.

- 1 First of all, please check carefully the whole manuscript for typos.
- 2 In section II, consider 3D case, why the $3+1$ dimensions in abstract? It seems contradictory.
- 3 Legend error in Figure 4. And the vertical and horizontal coordinates are not clear in Figure 4. In Figure 5, a dashed border appears?
- 4 The format of the references is not uniform, for example: reference 14 and 15 journal abbreviation and full name. Similar problems also appear in other references, please check them uniformly.
- 5 The all equations form in the whole article is not beautiful enough.