

search may remain hidden until more robust methods for assessing the time-specific as well as time-invariant average properties of turbulence are formulated. Standard Reynolds averaging and its modern refinements, unfortunately, are not reliable for deducing the statistical properties of turbulence.

References

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Falkovich and Sreenivasan reply:

Our review was devoted to fundamental physical properties of turbulence. These properties manifest themselves most clearly in instances that are statistically steady and homogeneous. We interpret the letter writers' concern to mean that one has to be careful, in general circumstances, about the choice of the averaging procedure. Indeed, one needs to exercise care in defining averages for nonstationary processes or those with insufficient data. However, that fact does not invalidate the Navier–Stokes equations or the advection–diffusion equation.

One possible explanation for the zero values of the inferred integral scale is the inadvertent filtering out of the very lowest frequencies from a measured turbulent signal. This was an attribute of much of the instrumentation used some 30 years earlier, before the digital revolution became commonplace.

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