

DFD15-2015-000470

Abstract for an Invited Paper
for the DFD15 Meeting of
the American Physical Society

A Brief History of the Lumley 'Projection'

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Few ideas in the history of turbulence have generated more intense feelings and reaction than Lumley's 1966 (1) proposal for replacing a random turbulent velocity field by maximizing a deterministic projection upon it. Nor have few ideas been less understood, both by those hostile to it and more recently by some of its advocates. This talk will review what was truly great about Lumley's idea – the projection itself. And explore briefly some of the sources of the misunderstanding and emotions surrounding it. It will be argued that the original idea still holds the key to moving forward toward a deeper understanding of turbulence. Reference: 1. J. L. Lumley (1967) "The structure of inhomogeneous turbulent flows" in *Atmospheric Turbulence and Radio Wave Propagation* (A. M. Yaglom and V. I. Tatarsky eds.), Nauka, Moscow, USSR, 166–176.