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The emergence of isolated coherent vortices in turbulent flow. (English) Zbl 0561.76059
J. Fluid Mech. 146, 21-43 (1984).

A study is made of some numerical calculations of two-dimensional and geostrophic turbulent flows. The primary result is that, under a broad range of circumstances, the flow structure has its vorticity concentrated in a small fraction of the spatial domain, and these concentrations typically have lifetimes long compared with the characteristic time for nonlinear interactions in turbulent flow (i.e. an eddy turnaround time).

MSC:

76F05 Isotropic turbulence; homogeneous turbulence

Cited in **202** Documents

Keywords:

vorticity concentrations; isotropic, homogeneous, large-Reynolds-number turbulence; cascade processes; two-dimensional and geostrophic turbulent flows

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