Bruneau, Ch. H.; Fischer, P.; Peter, Z.; Yger, A.
Comparison of numerical methods for the computation of energy spectra in 2D turbulence. II: Adaptive algorithms. (English) Zbl 1137.94313

Summary: The first part of this work [ibid. 4, No. 2, 169–192 (2005; Zbl 1137.94312)] was devoted to comparison of direct numerical methods for the computation of energy spectra in 2D turbulence. Here such direct methods are mixed together and combined with adaptive algorithms such as matching pursuit. It appears curiously that the proper orthogonal decomposition basis is sometimes less adapted to the reconstruction process than cosine or wavelet packets dictionaries.

MSC:
94A12 Signal theory (characterization, reconstruction, filtering, etc.)
62M10 Time series, auto-correlation, regression, etc. in statistics (GARCH)
76F99 Turbulence

Keywords:
matching pursuit algorithms; proper orthogonal decomposition; wavelet and cosine packets

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