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Statistical properties of 2D RT-induced mixing at nonlinear and transient stages for 6-modes ensemble

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Present work introduce the results of statistical analysis of specially chosen ensemble of RT-unstable flows. Initial perturbations have been set up as sum of six subharmonics (on computation domain) corresponding to first six prime numbers with randomly chosen initial phases. Ensemble-averaged distributions of physical values show spatial complexity with different typical structures for different analyzed fields. Observed inverse cascade principally accords to Layzer-type models, but time laws which govern dominant scales are likely to differ depending on the direction (along or orthogonal to gravity acceleration direction); deviation of temporal dependence of averaged TMZ width from t^2 law can be interpreted as evidence in favor of this difference. This behaviour can be explained in terms of long-living memory about pecularities of initial conditions, especially about combinations of proxime thin spikes. This circumstance may indicate that it is not correct to use Layzer-type evolution law to describe bubbles and spikes dynamics simultaneously.

The research is supported by ISTC, Project #1481.