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The Drip Paintings of Jackson Pollock: Are They Really fractal?

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It has been claimed the drip paintings of late Abstract Expressionist painter Jackson Pollock can be usefully characterized as fractal, and that fractal analysis can be used to authenticate works of unknown origin. This academic issue has become of more general interest following the recent discovery of a cache of disputed Pollock paintings. I will demonstrate that this hypothesis of “Fractal Expressionism” is fundamentally flawed, and that fractal analysis as an authentication tool yields inconsistent and unreliable results. This work has also led to two new results in fractal analysis of more general scientific significance. First, the composite of two fractals is not generally scale invariant and exhibits complex multifractal scaling in the small distance asymptotic limit. Second the statistics of box-counting and related staircases provide a new way to characterize geometry and distinguish fractals from Euclidean objects.