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Fractal Dimension of Turbulent Black Holes[1] JOHN RYAN WESTERNACHER-SCHNEIDER, University of Guelph Perimeter Institute — We resolve a recent claim that turbulent black holes in anti-de Sitter space have event horizons with a fractal dimension greater than 3. By constructing such event horizons using turbulent fluid simulations and the fluid-gravity duality, we measure the fractal dimension of the horizon to be ≈ 2.6. There is mounting evidence that astrophysical black holes can become turbulent, so a covariant formulation of the fractal dimension will be useful for characterizing their states.

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