

On the Hausdorff dimension of a very rough Weierstrass curve whose components are not controlled

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We investigate geometric properties of Weierstrass curves with two components, representing series based on trigonometric functions. They are seen to be $\frac{1}{2}$ -Hölder continuous, and are not (para-)controlled with respect to each other in the sense of the recently established Fourier analytic approach of rough path analysis. Their graph is represented as an attractor of a smooth random dynamical system. Our argument that its graph has Hausdorff dimension 2 is in the spirit of Ledrappier-Young's approach of the Hausdorff dimension of attractors. This is joint work with G. dos Reis (U Edinburgh) and O. Pamen (U Liverpool and AIMS Ghana).

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