

Applied Mathematical Sciences 2014 vol.8 N141-144, pages 7175-7181

Novel approach to calculation of box dimension of fractal functions

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Abstract

© 2014 Konstantin Igudesman, Roman Lavrenov and Victor Klassen. We introduce new method of calculation of box dimension of fractal functions' graphs, which are based on fractal interpolation functions. Provide a comparison of the effectiveness of the traditional method of calculating the box dimension to our new approach. On the example of the Weierstrass function we show that the new method almost 3 times more effective than classical.

<http://dx.doi.org/10.12988/ams.2014.49718>

Keywords

Approximation, Box dimension, Fractal, Fractal interpolation, Iterated function system, Minkowski dimension, Weierstrass function