

Fractional Duffing's equation: a numerical study

S. Jiménez

Dept. Matemática Aplicada a las TIC,
ETSIT, Universidad Politécnica de Madrid, Spain

We consider a fractal counterpart of a standard Duffing's equation where we keep the second order derivative but allow the first order derivative to take non integer values in the range from 0 to 2 using a Caputo derivative. We simulate the fractal system using two different approaches and focus on the presence of a strange attractor and its chaotic regime.