

# Sierpiński curve Julia sets for quadratic rational maps

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The Sierpiński carpet fractal is one best known planar, compact, connected sets. It is a universal plane continuum and there is a topological characterization of this set. Any planar set homeomorphic to a Sierpiński carpet is called a Sierpiński curve. In recent years several authors have shown that Sierpiński curve can arise as the Julia set of certain holomorphic functions. We make an attempt towards a more systematic approach to the problem of existence of Sierpiński curves as Julia sets of rational maps. Our goal is to find dynamical conditions under which we can assure that the Julia set of a certain quadratic rational map is a Sierpiński curve.