AN EFFECTIVE ALGORITHM TO COMPUTE MANDELBROT SETS IN PARAMETER PLANES

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Abstract. In 2000 McMullen proved that copies of generalized Mandelbrot set are dense in the bifurcation locus for generic families of rational maps. We develop an algorithm to an effective computation of the location and size of these generalized Mandelbrot sets in parameter space. We illustrate the effectiveness of the algorithm by applying it to concrete families of rational and entire maps.

Keywords: Holomorphic dynamics, Julia and Fatou sets, bifurcation locus, Misiurewicz bifurcation, Mandelbrot set, Algorithm.

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