A survey of computability results for Julia sets

Michael Yampolsky

Mathematics Department, University of Toronto, 40 St. George Street, Toronto, ON, Canada, M5S 2E4

A compact set in the plane is computable if there is an algorithm to draw it on a computer screen with an arbitrary resolution. Together with Mark Braverman we have investigated computability questions for Julia sets. I will survey the results, some of which were unexpected. In particular, even when the parameters of the rational map are computable, it is possible that its Julia set is non-computable.