

1025-30-82

Rich L Stankewitz* (rstankewitz@bsu.edu), Dept. of Math. Sciences, Ball State University, Muncie, IN 47304, and **Hiroki Sumi** (sumi@math.sci.osaka-u.ac.jp), Department of Mathematics, Osaka University, 1-1 Machikaneyama, Toyonaka, Osaka, 560-0043, Japan. *Julia sets of postcritically bounded polynomial semigroups.*

Let G be a semigroup of complex polynomials (under the operation of composition of functions) such that there exists a bounded set in the plane which contains any finite critical value of any map $g \in G$. We discuss the dynamics of such polynomial semigroups as well as the structure of the Julia set of G . In general, the Julia set of such a semigroup G may be disconnected, and each Fatou component of such G is either simply connected or doubly connected. We show that for each two doubly connected Fatou components A and B , a Cantor set of quasicircles in the Julia set of G separates \overline{A} and \overline{B} . Also, we discuss how the Julia sets of the maps $g \in G$ are distributed within the Julia set of the entire semigroup G . If there is time, we will provide results concerning the (semi) hyperbolicity of such semigroups. (Received January 16, 2007)