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**S. Dale Cutkosky\*** (cutkoskys@missouri.edu), Dept. Math., University of Missouri, Columbia, MO 65211, and **Juergen Herzog** and **Hema Srinivasan**. *Asymptotic Growth of Generalized Symbolic Algebras*.

We consider the question of computing the asymptotic growth of the length of saturated powers modulo ordinary powers of an ideal  $I$  in a local ring. We show that the answer depends on the analytic spread of the ideal, and show that at least when  $I$  has an isolated singularity, there is polynomial like asymptotic growth. We discuss the relation with the problem of finite generation of the algebra of initial ideals of powers of  $I$ , and the good asymptotic behavior of powers of homogeneous ideals. (Received August 05, 2008)