Jonathan Meshes* (jmeshes@gmail.com), 3733 Clarence Ave., Berwyn, IL 60402. A Value Distribution Result for Functions of Small Growth in the Unit Disk. Preliminary report.

Functions meromorphic in the complex unit disk $D = \{z : |z| < 1\}$ can be divided into those of small growth and large growth as measured by the Nevanlinna characteristic function T(r, f). We let \mathcal{F} be those functions f meromorphic in D for which

$$\limsup_{r \to 1^{-}} \frac{T(r, f)}{\log \frac{1}{1 - r}} < \infty.$$

 \mathcal{F} is the set of functions of so-called small growth in D, as measured by T(r, f). It is known that \mathcal{F} is closed under addition, multiplication and differentiation. However, there exist analytic functions $f \in \mathcal{F}$ for which $\int f \notin \mathcal{F}$. We let \mathcal{S} denote this class of analytic functions.

We consider the distribution of roots of the equation f(z) = a for different values of a where f is in \mathcal{S} and the function h in D which has h' = f. Our feature theorem will tell us that for functions h with $h' = f \in \mathcal{S}$, h cannot omit any finite values. In fact we will give an estimate on the number of roots of the equation h(z) = a for any $a \in \mathbb{C}$. (Received September 15, 2008)