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**C-Y. Jean Chan\*** ([chan1cj@cmich.edu](mailto:chan1cj@cmich.edu)), Department of Mathematics, PE 214, Central Michigan University, Mt. Pleasant, MI 48859. *Hilbert-Kunz Functions without the Normal Condition*. Preliminary report.

Let  $R$  be an excellent local ring of characteristic  $p$ ,  $\dim R = d$  and with a perfect residue field. Huneke, McDermott and Monsky (Math. Res. Lett. **11** (2004) 539-546) proved that if in addition  $R$  is normal, then there exists a constant  $\beta$  such that the Hilbert-Kunz function is  $eq^d + \beta q^{d-1} + O(q^{d-2})$  for  $n \gg 0$  in  $\mathbb{Z}$  and  $q = p^n$ .

We will discuss the possibility of obtaining this result when  $R$  is assumed with a condition weaker than normal by applying some properties of cycle classes in the Chow group (Received February 01, 2009)