1154-11-393 **Xander Faber*** (`awfaber@super.org`) and **Clayton Petsche**. *Totally T-adic functions of small height.* Preliminary report.

A nonzero algebraic number α is *totally p-adic* if its minimal polynomial (over $\mathbb{Q}$) splits completely over $\mathbb{Q}_p$. If α is not a $(p-1)st$ root of unity, then the naive logarithmic height of such an element is uniformly bounded away from zero by an equidistribution result of Bombieri/Zannier or an elementary inequality of Pottmeyer.

In this work, we introduce a geometric analogue. Fix a finite field $\mathbb{F}_q$, and consider the rational function field $\mathbb{F}_q(T)$. An algebraic function f that generates a separable extension of $\mathbb{F}_q(T)$ is *totally T-adic* if its minimal polynomial (over $\mathbb{F}_q(T)$) splits completely in the field of Laurent series $\mathbb{F}_q(\!(T)\!)$. We will discuss a lower bound for the height of any nonconstant totally T-adic function, and we will show that functions achieving the lower bound give rise to curious algebraic curves over $\mathbb{F}_q$ with many rational points. We also investigate the limit-infimum of the heights of totally T-adic functions using a dynamical construction. (Received September 03, 2019)