Primitive points for Drinfeld modules

David TWEEDLE
The University of the West Indies

This is a joint work with Wentang Kuo. Let F be a global function field with a fixed place ∞. Let A be the ring of elements of F which are regular except possibly at ∞. Let $\phi : A \to K\{\tau\}$ be a rank-2 Drinfeld module of generic characteristic where K is a global function field. If $\wp$ is a prime of K of good reduction, then $a \in K$ is said to be a primitive point modulo $\wp$ for ϕ if the reduction of a modulo $\wp$ generates $\mathbb{F}_\wp$ as an A-module under the reduction of ϕ. Then the set of primes $\wp$ for which a is a primitive point modulo $\wp$ has positive density, unless there is some obstruction which forces the set to be finite.

This work is a function field analogue of work of Gupta and Murty [GM]. This work generalizes work of Hsu and Yu [HY].

[GM] Rajiv Gupta & M. Ram Murty, "Primitive points on elliptic curves", Compositio Mathematica, 58(1), 13-44 (1986)

[HY] Chih-Nung Hsu & Jing Yu, "On Artin's Conjecture for Rank One Drinfeld Modules", Journal of Number Theory, 88(1), 157-174 (2001).