

1116-11-1724      **Matthew A. Papanikolas\*** ([map@math.tamu.edu](mailto:map@math.tamu.edu)), Department of Mathematics, Texas A&M University, 3368 TAMU, College Station, TX 77843. *Hyperderivatives and difference equations in function field arithmetic.*

Function fields of one variable over finite fields have been studied extensively as analogues of number fields. In this setting Drinfeld modules and Anderson  $t$ -modules provide a rich collection of objects that play the roles of elliptic curves and abelian varieties, including theories of periods, Galois representations, and  $L$ -series. In this talk we will review connections among periods and Frobenius difference equations and discuss new results on tensor powers of the Carlitz module that relate hyperderivatives of Anderson-Thakur polynomials to coordinates of periods. (Received September 21, 2015)