

1135-11-2118      **Jeffrey Lin Thunder\*** ([jthunder@niu.edu](mailto:jthunder@niu.edu)), Mathematical Sciences Department, Northern Illinois University, DeKalb, IL 60115. *Heights in Function Fields: An Application to the Geometry of Curves.*

Given a hyperelliptic curve defined over a finite field, there is a quantity called the a-number attached to the curve. This a-number (a non-negative integer) encapsulates certain geometric information about the curve. It turns out that computing these a-numbers can be accomplished via counting solutions of unexpectedly small height to certain Diophantine equations over function fields.

In this talk we'll briefly discuss the connection alluded to above and then demonstrate the counting arguments that completely answer the question of how many hyperelliptic curves of given genus have a particular a-number. This is joint work with Derek Garton and Colin Weir. (Received September 25, 2017)