FELIX BARIL BOUDREAU, University of Lethbridge
Arithmetic Rank Bounds for Abelian Varieties

In his career, Ram Murty worked on the problem of bounding the rank of Abelian varieties over number fields, for example, in his 1995 paper *On the rank of* $J_0(N)(\mathbb{Q})$.

In this talk, we examine the analogous problem over function fields. Let K be a function field with perfect constant field k of arbitrary characteristic $p \geq 0$. We give upper bounds, depending on K, on the rank of the Mordell-Weil group over K of any Abelian variety which has trivial K/k-trace. Our result generalizes in various ways a previous theorem by Jean Gillibert (Université de Toulouse) and Aaron Levin (Michigan State University) on elliptic curves over functions fields of characteristic p different from 2 and 3 and is moreover stated under weaker assumptions. We also explore some consequences of our result. This is a joint work with Jean Gillibert and Aaron Levin.