SPEAKER: Michael Zieve (IAS)

TITLE: The intersection of subfields of a function field

ABSTRACT: Given two subfields of a field K, what can one say about their intersection? After presenting the few results known to hold for arbitrary K, I will focus on the case that K is the function field of an algebraic curve. This case of the problem is amenable to geometric tools, and indeed can be formulated as asking about the co-fibered product of two rational maps from a single curve to two other curves. I will present various results and examples, as well as applications to topics such as polynomial Diophantine equations $f(x) = g(y)$ having infinitely many integer solutions, polynomials having orbits with infinite intersection, and reducibility of "variables separated" polynomials $f(x) - g(y)$ (or of fibered products of more general maps between curves).