Speaker

Dr. Ignazio Longhi, Xi'an Jiaotong-Liverpool University.

Title

Aspects of zeta functions over function fields.

Abstract

Let $\mathbb{F}_q$ (where q is a power of p) be a finite field and F the rational function field $F_q(t)$. There are many deep analogies between F and the field of rational numbers $\mathbb{Q}$. In particular, in both cases it is possible to define zeta and L-functions, which (in both situations) allow p-adic interpolation. Moreover, Carlitz and Goss developed a characteristic p analogue of the zeta function: that is, a function defined on a "∞"-adic half-plane (where "∞" is a place of F) and taking values in a complete and algebraically closed field of positive characteristic. This Carlitz-Goss zeta function has been the object of many recent studies and enjoys surprising similarities with the classical Riemann zeta function. Goal of the talk is to survey these ideas, in particular from the point of view of p-adic (and "∞"-adic) interpolation.