

Title: Drinfeld Modular Curves and special values of L-functions.

Abstract: Most mathematicians at some point or another have come across the equation

$$\zeta(2) = \sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$$

where ζ is the Riemann zeta function. At first it seems like a numerical curiosity, but it turns out to have a deeper meaning - it can be ‘explained’ in terms of certain algebraic invariants of the rational number field.

Beilinson, building on the work of several people before him, formulated conjectures which attempt to explain integer values of the zeta function and its generalization to L-functions of algebraic varieties over number fields. However, these conjectures have been proved in only a handful of cases.

In this talk we will describe these conjectures and some generalization of these conjectures to varieties over the function field over a finite field as well as describe some of the cases where they have been resolved - in particular, for some L -functions arising from Drinfeld modular curves.