



Colloquium

October 2, 3:00 p.m. (8th Period)
(in the Atrium)

Speaker: Julian Michele

Title: Extensions of local fields given by Eisenstein polynomials
with a small number of terms

Abstract

Given a totally ramified extension L/K of local fields and a uniformizer π of L , $L = K(\pi)$ and the minimal polynomial of π over K is Eisenstein. If this polynomial has as few nonzero terms as possible, it gives us a relatively simple description of L/K . I will briefly introduce local fields and our motivation for studying them, then some terminology about ramification. I will discuss some known results about when a totally ramified extension of local fields is generated by a uniformizer whose minimal polynomial has only two or three terms, as well as defining a set of invariants called "indices of inseparability." Finally, I will discuss some further questions about 3-term Eisenstein polynomials, and a few other questions regarding when an extension is given by an Eisenstein polynomial with a small number of terms.