

Speaker: Kevin Tucker
UIC

Wednesday, January 28, 2015
3:00 PM
258 Hurley Hall

Title: On the Limit of the F-signature Function in characteristic Zero

Abstract:

The F-signature of a local ring in positive characteristic gives a measure of singularities by analyzing the asymptotic behavior of the number of splittings (F-splittings) of large iterates of the Frobenius endomorphism. One can also incorporate ideal pairs by restricting the set of "allowable" splittings, and varying the coefficient of the ideal gives rise to the F-signature function of the pair. While for each fixed characteristic $p > 0$ these functions tend to be extremely complicated, in the few examples that have been computed they tend to limit to a piecewise polynomial function as p tends to infinity. In this talk I will discuss what is known about these functions and their limits, and present a number of new computations for diagonal hypersurfaces. The new computations (joint with Shideler) build on the techniques of Han and Monsky used to compute the Hilbert-Kunz multiplicities of diagonal hypersurfaces.