Speaker: Clayton Petsche

Title: Strange attractors and horseshoe dynamics associated to
automorphisms of the p-adic affine plane

Abstract: We consider two families of nonlinear automorphisms of the affine plane over a complete, locally compact non-Archimedean field. For quadratic Hénon maps in odd residue characteristic, we characterize the dynamics in all cases; these maps can exhibit either good reduction, non-chaotic trapped attractors, or Horseshoe dynamics. For a certain family of hyperbolic automorphisms in which the algebraic degree is equal to the residue characteristic, we show the existence of a chaotic attractor with non-integral Hausdorff dimension.