Speaker: Peter Whang

Title: Diophantine analysis on moduli of local systems

Abstract: A classical result concerning linear actions of arithmetic groups is the finiteness of class number, i.e. number of integral orbits with fixed invariants. In this talk, we explore a nonlinear analogue of this on moduli spaces for special linear rank two local systems on topological surfaces. After motivating their Diophantine study, we use mapping class group dynamics and differential geometric tools to establish a structure theorem for the integral points on these varieties, generalizing 1880 work of Markoff. We also analyze effectively the integral points of nondegenerate algebraic curves on these moduli spaces and, time permitting, we discuss more recent work in related directions. ?