Northeastern University  Mathematics Department

Geometry, Physics, and Representation Theory Seminar

Ethan Cotterill

Instituto de Matemática e Estatística da Universidade Federal Fluminense

Thursday, January 31, 2:50-3:50 pm, Lake Hall 509

Real inflection points of real linear series on real (hyper)elliptic curves

(joint with I. Biswas and C. Garay López)

Abstract

According to Plucker's formula, the total inflection of a linear series (L, V) on a complex algebraic curve C is fixed by numerical data, namely the degree of L and the dimension of V. Equipping C and (L, V) with compatible real structures, it is more interesting to ask about the total real inflection of (L, V). The topology of the real inflectionary locus depends in a nontrivial way on the topology of the real locus of C. We study this dependency when C is hyperelliptic and (L, V) is a complete series. We first use a nonarchimedean degeneration to relate the (real) inflection of complete series to the (real) inflection of incomplete series on elliptic curves; we then analyze the real loci of Wronskians along an elliptic curve, and formulate some conjectural quantitative estimates.