

TOPOLOGY SEMINAR

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Linear series on metrized complexes of algebraic curves

Tuesday, May 1st, 4:00pm, in 383-N

Abstract: A *metrized complex of algebraic curves* is, roughly speaking, a finite metric graph together with a collection of marked complete nonsingular algebraic curves C_v , one for each vertex of the graph. The marked points on C_v correspond bijectively to the edges of the graph incident to v . We establish a Riemann–Roch theorem for metrized complexes of algebraic curves which generalizes both the classical Riemann–Roch theorem and its tropical and graph-theoretic analogues. We also show that the rank of a divisor cannot go down under specialization from curves to metrized complexes. As an application of these ideas, we formulate a partial generalization of the Eisenbud–Harris theory of limit linear series to semistable curves which are not necessarily of compact type. This is joint work with Omid Amini.