Algebra and Number Theory Seminar

Divisors on Non-Generic Curves

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Abstract: In algebraic geometry the study of divisors on curves, known as Brill-Noether theory, has been a rich field of study for decades. When a curve C is general in M_g, the moduli space parameterizing all curves of genus g, much is known about the spaces of divisors of prescribed rank r and degree d, denoted $W^r_d(C)$. However, when C is not general, the loci $W^r_d(C)$ can exhibit bizarre and pathological behavior. Divisors on a curve are intimately related to line bundles on that curve, so afterwards we will introduce the idea of the splitting type of a line bundle, a more refined invariant than the rank and degree. The main goal of this talk will be to define and analyze the spaces of line bundles with a given splitting type and argue that these are a "correct" generalization of the spaces $W^r_d(C)$. All of this can be done from a purely combinatorial standpoint and involves an in-depth study of certain special families of Young tableaux that only depend on a given splitting type.

Thursday, February 18, 2021, 1:00 pm
https://emory.zoom.us/j/92174650436

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