Mathematics, Statistics, and Computer Science **@ UIC**

Algebraic Geometry Seminar

Enumerating pencils with moving ramification on curves

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Abstract: We consider the general problem of enumerating branched covers of the projective line from a fixed general curve subject to ramification conditions at possibly moving points. Our main computations are in genus 1; the theory of limit linear series allows one to reduce to this case. We first obtain a simple formula for a weighted count of pencils on a fixed elliptic curve E, where base-points are allowed. We then deduce, using an inclusion-exclusion procedure, formulas for the numbers of maps E->P^1 with moving ramification conditions. A striking consequence is the invariance of these counts under a certain involution. Our results generalize work of Harris, Logan, Osserman, and Farkas-Moschetti-Naranjo-Pirola.

Monday, November 18 at 4:00 PM in 427 SEO