Algebra Seminar

a-Numbers of curves in ArtinSchreier covers

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Abstract: Let f : Y -¿ X be a branched Z/pZ-cover of smooth, projective, geometrically connected curves over a perfect field of characteristic p¿0. We investigate the relationship between the a-numbers of Y and X and the ramification of the map f. This is analogous to the relationship between the genus (respectively p-rank) of Y and X given the Riemann-Hurwitz (respectively Deuring–Shafarevich) formula. Except in special situations, the a-number of Y is not determined by the a-number of X and the ramification of the cover, so we instead give bounds on the a-number of Y. We provide examples showing our bounds are sharp. The bounds come from a detailed analysis of the kernel of the Cartier operator. This is joint work with Bryden Cais.

Tuesday, April 9, 2019, 4:00 pm
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Mathematics
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