

Arithmetic inflection of superelliptic curves

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We explore the inflectionary behavior of linear series on superelliptic curves X (i.e., cyclic covers of \mathbb{P}^1) over fields of arbitrary characteristic. Here we give a precise description of the inflection of linear series over the ramification locus of the superelliptic projection; and we initiate a study of those inflectionary varieties that parameterize the the inflection points of linear series on X supported away from the superelliptic ramification locus. This is a report on joint work with Ignacio Darago, Cristhian Garay López, Changho Han, and Tony Shaska.