DALHOUSIE MATHEMATICS COLLOQUIUM

Monday April 1 2019, 3:30 pm, Chase 319

Speaker: Andrew Obus
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Dynamical systems, periodic points, and dynatomic curves

The dynamical systems $x \to x^r + c$, say, over the complex numbers, are extensively studied objects. The periodic points of these systems can be encoded in algebraic objects called dynatomic curves (or dynatomic modular curves), and the geometry of these curves can be exploited to shed light on questions of existence of periodic points. A particularly interesting and mysterious feature of these dynatomic curves is their behavior when they are viewed in characteristic p, for p a prime that may or may not be related to the period in question. We will give an overview of this behavior, as well as some partial new explanatory results. No knowledge of dynamical systems or algebraic geometry will be assumed.