

COLLOQUIUM

MATHEMATICS AND STATISTICS
QUEEN'S UNIVERSITY

COMPLEX DYNAMICS AND ARITHMETIC EQUIDISTRIBUTION

Abstract. About 5 years ago, Matt Baker and I formulated a conjecture about the dynamics of rational maps on \mathbb{P}^1 , connecting geometry and arithmetic in the moduli space of such maps. My goal is to present recent progress on the conjecture, illustrating some of the main ideas appearing in proofs of special cases. One important special case includes a result about torsion points on elliptic curves, and I hope to discuss how this case can be related to dynamical stability and the Mandelbrot set.

Laura De Marco (Northwestern University)

Laura DeMarco received her Ph.D in Mathematics from Harvard University in 2002 under the supervision of Curtis McMullen. From 2002 to 2007, she was at the University of Chicago (as L.E. Dickinson Instructor from 2002 to 2005, and Assistant Professor from 2005 to 2007). From 2007 to 2014 she was at the University of Illinois at Chicago (as Assistant Professor from 2007 to 2009, Associate Professor from 2009 to 2012, and Professor from 2012 to 2014). In 2014, Prof DeMarco joined Northwestern University. Her awards include the NSF Postdoctoral Fellowship at the University of Chicago (2003-2006), the Sloan Foundation Research Fellowship (2008-2010), the NSF Career Award (2008-2013), the Simons Foundation Fellowship (2015-2016), and the Ruth LyttleSatter Prize (2017). In 2012, she became Fellow of the American Mathematical Society. Laura DeMarco is an Invited Speaker at the International Congress of Mathematicians in Rio de Janeiro in 2018. Her research interest include dynamical systems, complex analysis, and arithmetic geometry. She mainly focuses on the dynamics of rational maps on \mathbb{P}^1 and their moduli spaces.

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