Algebra Seminar

Local-global principles on stacky curves and solving generalized Fermat equations

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Abstract: The primitive solutions of certain generalized Fermat equations, i.e., Diophantine equations of the form Axˆ2+Byˆ2 = Czˆn, can be studied as integral points on certain stacky curves. In a recent paper by Bhargava and Poonen, an explicit example of such a curve of genus 1/2 violating local-global principle for integral points was given. However, a general description of stacky curves failing the local-global principle is unknown. In this talk, I will discuss our work on finding the primitive solutions to equation of the form by studying local-global principles for integral points on stacky curves constructed from such equations. The talk is based on a joint project with Juanita Duque-Rosero, Christopher Keyes, Andrew Kobin, Manami Roy, and Soumya Sankar.

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