Algebra and Number Theory Seminar

Local-to-global principle for rational points on conic and quadric bundles over curves

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Abstract: One expects the Brauer-Manin obstruction to control rational points on 1-parameter families of conics and quadrics over a number field when the base curve has genus 0. Results in this direction have recently been obtained as a consequence of progress in analytic number theory. On the other hand, it is easy to construct a family of 2-dimensional quadrics over a curve with just one rational point over Q, which is a counterexample to the Hasse principle not detected by the étale Brauer-Manin obstruction. Conic bundles with similar properties exist over real quadratic fields, though most certainly not over Q.

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Mathematics and Computer Science
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