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Geometric aspects of arithmetic statistics over function fields

Problems of arithmetic statistics: What does the class group of a random quadratic field look like? How many primes are there in a short interval? What is the distribution of the Mobius function? Can be considered not only over number fields, but over function fields of curves over finite fields. The function-field version of the problem often reveals interesting geometric or topological structures, typically having to do with stability phenomena for cohomology of moduli spaces. I'll talk about some old and new results along these lines.