ALGEBRA AND NUMBER THEORY
SEMINAR

Steinitz classes of number fields and Tschirnhausen bundles of covers of the projective line

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Abstract: Given a number field extension L/K of fixed degree, one may consider $\mathcal{O}_L$ as an $\mathcal{O}_K$-module. Which modules arise this way? Analogously, in the geometric setting, a cover of the complex projective line by a smooth curve yields a vector bundle on the projective line by pushforward of the structure sheaf; which bundles arise this way? In this talk, I'll describe recent work with Vakil in which we use tools in arithmetic statistics (in particular, binary forms) to completely answer the first question and make progress towards the second.

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