

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

Strong arithmetic equivalence

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Monday, February 13 at 4:15 pm
111 Cummington Mall, MCS B21
Tea and cookies in MCS 144 at 4:00 pm

Abstract: Number fields with the same Dedekind zeta function are said to be arithmetically equivalent. Such number fields necessarily have the same degree, discriminant, signature, and Galois closure, but may have non-isomorphic class groups, rings of adeles, and idele class groups. Motivated by a recent result of Prasad, I will discuss several stronger notions of arithmetic equivalence that force isomorphism of some or all of these invariants without forcing an isomorphism of number fields, and give some explicit examples.

These results also have application to the construction of curves with isomorphic Jacobians (due to Prasad), isospectral Riemannian manifolds (due to Sunada), and isospectral graphs (due to Halbeisen and Hungerbühler).