Galois representations attached to elliptic curves

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Abstract

The goal of this seminar is to introduce the notion of the ℓ-adic Tate module, and why it is useful in the study of elliptic curves. We will start by introducing some general notions related to elliptic curves, as well as some profinite group theory. We will then see the construction of the Tate module, how it is helpful for representations of elliptic curves, and some of its other applications.