Oberseminar
Zahlentheorie und Arithmetische Geometrie

Dr. Francesc Fité

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"Sato-Tate groups of abelian surfaces and CM elliptic k-curves"

The Sato-Tate group $\mathrm{ST}(A)$ of an abelian variety A defined over a number field k of dimension g is a compact real Lie subgroup of the unitary symplectic group $\mathrm{USp}(2g)$ that conjecturally governs the limiting distribution of the Frobenius conjugacy classes attached to A. It is well known that there exist 3 possibilities for the Sato-Tate group of an elliptic curve. I will present a classification result which establishes that for an abelian surface defined over a number field the Sato-Tate group is limited to a list of 52 possibilites, exactly 34 of which can occur if $k = \mathbb{Q}$. Then I will consider the question concerning the existence of a number field k_0 over which each of the 52 possibilities can be attained by a certain abelian surface of defined over k_0. An affirmative answer to this question will be obtained as a consequence of the study of fields of definition of certain CM elliptic k-curves. The talk will report on joint works with Kedlaya, Rotger, Sutherland, and Guitart.

Donnerstag 23.06.2016

12:00 Uhr, Raum a410

Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

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und Diskrete Mathematik