Seminário do Grupo de Álgebra e Geometria

Hasse principle and twists of the modular curve $X(p)$

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Resumo

The Hasse principle is the idea that a Diophantine equation over the rational numbers should have a rational solution if and only if it has solutions in all of its completions, namely, the real numbers and all p-adic fields. The Hasse-Minkowski theorem states that the Hasse principle holds for quadratic forms over $\mathbb{Q}$, but it fails in general, as illustrated by the classic Selmer example $3x^3 + 4y^3 + 5z^3 = 0$. In recent work of Lorenzo and Vullers, they give twists of the modular curve $X(7)$ that are counterexamples to the Hasse principle. In this talk, we will discuss generalizations of their result, for example, that there are infinitely many counterexamples to the Hasse principle for twists of the modular curve $X(p)$ for all primes p congruent to 1 mod 4.

Detalhes do Seminário

- **Data:** 27 de novembro de 2025
- **Hora:** 14:00 – 15:00
- **Local:** Sala Sousa Pinto

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