Séminaire de théorie des nombres

Le 26 mai 2014 à 14h (Jussieu)

Elliptic curves over real quadratic fields are modular.

Exposé de Samir Siksek
(Warwick)

Résumé : We combine recent breakthroughs in modularity lifting with a 3-5-7 modularity switching argument to deduce modularity of elliptic curves over real quadratic fields. We discuss the implications for the Fermat equation. In particular we prove an asymptotic version of Fermat's Last Theorem over $\mathbf{Q}(\sqrt{d})$ for a subset of squarefree positive d having density 5/6. This is based on joint work with Nuno Freitas (Bayreuth) and Bao Le Hung (Harvard).