

Séminaire de théorie des nombres Londre – Paris

Le 8 novembre 2009 à 10h30 (à l'ENS Ulm)

A model-theoretic approach to certain diophantine problems

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Résumé : I will describe a result, joint with Alex Wilkie, about the distribution of rational points on certain non-algebraic sets in real space. The natural setting is an ‘o-minimal structure over the real numbers’, a notion from model-theory. Umberto Zannier proposed a surprising strategy using this result to give a new proof of the Manin-Mumford conjecture. I will sketch how this strategy may be used to give an unconditional proof of the André-Oort conjecture for products of modular curves, highlighting the use of o-minimality at different junctures, and discuss further results and prospects.