Séminaire de théorie des nombres

Le 20 février 2017 à 14h (PRG)

The symplectic argument and the Generalized Fermat Equation

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Résumé : Wiles' proof of Fermat's Last Theorem gave birth to the 'modular method' to study Diophantine equations. Since then many other equations were solved using generalizations of this method. However, the success of the generalizations relies on a final "contradiction step" which is invisible in the original proof.

In this talk, we will discuss why developing methods to distinguish Galois representations is relevant to this contradiction step. In particular, we will explain how the "symplectic argument" can be used to succeed in this last step. We will illustrate the method with example of applications to special cases of the Generalized Fermat equation $x^r + y^q = z^p$.