Séminaire de théorie des nombres

Le 28 juin à 14h

The Integral Basis Problem of Eichler

Exposé de Haruzo Hida

Résumé : Writing down a given modular forms as a linear combination of theta series is a classical problem. The celebrated formula of Jacobi : "the number of ways of expressing an odd positive integer n as sums of four squares is equal to 8 times the sum of positive divisors of n" is an identity of the theta series (of the sum of four squares) and an Eisenstein series, which is the origin of the Siegel-Weil formula. Eichler solved this problem for non-Eisenstein series for the norm forms of division quaternion algebras over the rational numbers, and his work is vastly generalized by Jacquet-Langlands to any quaternion algebra over any number field. I would like to present a simple argument (assuming the theorem of Jacquet-Langlands) how to express a given integral Hilbert modular form into an integral linear combination of such theta series.