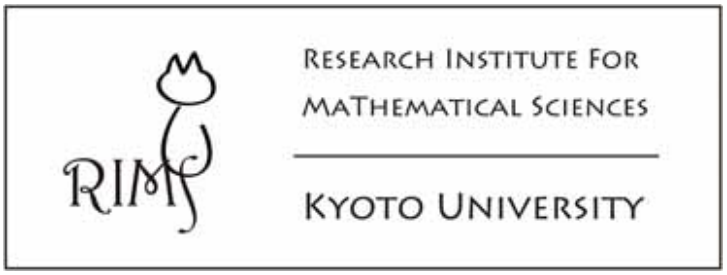

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Exponential motives (1)

mardi 4 décembre 2018 11:30 (1 heure)

What motives are to algebraic varieties, exponential motives are to algebraic varieties together with a regular function. Such pairs arise in a wealth of contexts: as Landau-Ginzburg models in mirror symmetry of Fano varieties, in the cohomological interpretation of exponential sums over finite fields, or when trying to treat numbers such as exponentials or special values of the gamma function on an equal footing to periods. Following ideas of Kontsevich, Katz, and Nori, one can construct a Tannakian category of exponential motives over a subfield of the complex numbers and a realisation functor with values on a suitable subcategory of mixed Hodge modules over the affine line. I will first explain the construction of the category and a useful criterion to decide whether an exponential motive is classical or not. I will then illustrate this criterion with an example where it allows one to study L-functions associated with symmetric power moments of Kloosterman sums. The talks are based on joint work with Peter Jossen (first part) and with Claude Sabbah and Jeng-Daw Yu (second part).

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