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Javier Fresán: Exponential motives.

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, in the cohomological interpretation of exponential sums over finite fields, or when trying to treat numbers such as the 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 mixed Hodge modules over the affine line. In this series of lectures, based on joint work with Peter Jossen, I will sketch the main constructions focusing on examples.