Noncommutative motives and their applications

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I will discuss recent work in collaboration with Goncalo Tabuada, on categories of noncommutative motives initially proposed by Kontsevich. After reviewing some of the properties of these categories and how they relate to the classical (commutative) theory of motives, I will explain some applications to motivic decompositions and a possible new approach to the Dubrovin conjecture in quantum cohomology.