Integral Nori Motives

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The classical theory of Nori motives provides a tensor abelian category of motives over a field k of characteristic zero, with a nice universal property and realisation functors interpolating various cohomology theories. We will construct a commutative algebra N_X in the category of étale motivic sheaves over any scheme X of characteristic zero, compatible with base change, such that the category $DN_{gm}(X)$ of geometric objects in modules over N_X has natural t-structures, the 6 operations, and conservative realisation functors. Over a field we recover the derived category of Nori motives, and with rational coefficients we recover the derived category of Ivorra-Morel's category of perverse Nori motives. This provides abelian categories of motivic sheaves with integral coefficients. This is joint work with Raphaël Ruimy.

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