

MIXED TATE MOTIVES

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ABSTRACT. Grothendieck first defined the notion of a “motif” as a way of finding an universal cohomology theory for algebraic varieties. Later in the eighties, Beilinson and Deligne independently described a conjectural abelian tensor category of mixed motives containing Grothendieck’s category of pure motives as the full subcategory of semi-simple objects.

In analogy with the category of continuous Galois representations in finite dimensional \mathbb{Q} -vector spaces, one has the Tate objects in the category of mixed motives. We look at full subcategory of mixed motives generated by Tate objects. We will describe some constructions of the category of mixed Tate motives due to Bloch, Kriz and May relating mixed Tate motives to the DG modules over the Bloch cycle algebra.