ALGEBRAIC CYCLES AND MOTIVES, A JACOBIAN ROMANCE

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In this talk I will attempt to give a gentle introduction to a long term project to describe the abelian category of mixed motives via algebraic cycles (in the way Grothendieck may have intended them to be understood). One potential advantage of this approach is that one can compute elements explicitly enough that there is potential to relate them computationally to, and reveal otherwise hidden structure of, conjectures regarding special values of L-functions, periods, and images of regulator maps. After motive-ating why it is geometrically natural to look for a description of the category of mixed motives via algebraic cycles, I will highlight work in progress, joint with A Logan and A Torzewski, of an explicit and computable construction of the category of mixed A-motives for a very general principally polarized abelian variety A.