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Motivic cohomology in mixed-characteristic

Motivic cohomology is a cohomology theory that can be defined internally within Grothendieck's category of motives. Voevodsky developed this theory for smooth varieties, demonstrating its profound connections to algebraic cycles and algebraic K -theory. However, its behavior beyond the smooth case remains less well understood. Building upon recent advancements by Bachmann, Elmanto, Morrow, and Bouis, we establish its \mathbb{A}^1 -homotopy invariance for a broader class of "smooth" schemes. This is part of ongoing work in collaboration with Tess Bouis.