

Perverse homotopy heart of stable motivic homotopy and Milnor-Witt cycle modules

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In the nineties, Voevodsky proposed a radical unification of algebraic and topological methods. The amalgam of algebraic geometry and homotopy theory that he and Fabien Morel developed is known as motivic homotopy theory. Roughly speaking, motivic homotopy theory imports methods from simplicial homotopy theory and stable homotopy theory into algebraic geometry and uses the affine line to parameterize homotopies. Voevodsky developed this theory with a specific objective in mind: prove the Milnor conjecture. He succeeded in this goal and won the Fields Medal for his efforts in 2002.

In this talk, I will present an ongoing project in collaboration with Frédéric Déglise and Fangzhou Jin where we realize Ayoub's conjectural program showing that the heart of the motivic stable homotopy category over appropriate base schemes can be related to a suitable version of relative Milnor-Witt modules.

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