

Duality in (perfect) motivic homotopy theory

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Abstract: This talk treats a conjectured duality on modules over K-theory in the stable homotopy category of a scheme whose dualising object is given by G-theory. I shall explain a proof of the conjecture for quasi-excellent schemes in characteristic zero. In order to approach the conjecture in positive characteristic, I sketch the construction of a "perfect motivic homotopy category" and compare it to the classical homotopy category. For this perfect category, I shall sketch the proof of an analogous version of the duality conjecture. This is joint work with Denis-Charles Cisinski, Jeroen Hekking, and Storm Wolters.