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The generating hypothesis in the stable module category

Let G be a finite group and let k be a field whose characteristic p divides the order of G . Freyd's generating hypothesis for the stable module category of G is the statement that a map between finite-dimensional kG -modules in the thick subcategory generated by k factors through a projective if the induced map on Tate cohomology is trivial. I will give an overview of joint work with Sunil Chebolu and Ján Mináč in which we show that for groups with periodic cohomology, the generating hypothesis holds if and only if the Sylow p -subgroup of G is C_2 or C_3 .