

Javier J. Gutiérrez, Universitat de Barcelona

Coreflective semilocalizing subcategories in triangulated categories with models

Abstract: A full subcategory of a triangulated category is called semilocalizing if it is closed under coproducts, cofibres and extensions. We prove that, in the presence of combinatorial models, any semilocalizing subcategory of a triangulated category is coreflective if certain large-cardinal axiom (Vopěnka's principle) is assumed true. Under the same assumptions, the same result is true for semicolocalizing subcategories. Thus, orthogonality sets up a bijection between semilocalizing subcategories and semicolocalizing subcategories. This answers open problems proposed by Hovey, Palmieri and Strickland in their axiomatic study of stable homotopy categories and by Neeman in the context of well-generated triangulated categories. This is a joint work with C. Casacuberta and J. Rosický.