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Daniel Bravo, James Gillespie and Mark Hovey* (mhovey@wesleyan.edu). *Generalizations of the stable module category*. Preliminary report.

For a quasi-Frobenius ring R , the stable module category is obtained by sending projective modules to zero. The associated model category structure on R -modules is perhaps the simplest interesting example of a model category. In this paper, we explore generalizations of the stable module category to broader classes of rings R , using model structures on chain complexes. One of these is Krause's stable derived category, but there are several others and the relationship between them remains unclear. They all coincide for Gorenstein rings R . (Received September 08, 2012)