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Reduction of τ-tilting modules and torsion pairs

Abstract: Adachi, Iyama and Reiten recently introduced a generalization of tilting theory for finite dimensional algebras which they called τ-tilting theory. Roughly speaking, this generalization is obtained by replacing Ext^1-rigid modules by modules which have no non-zero morphisms to its Auslander-Reiten translate. An important feature of τ-tilting theory is that it provides a completion of tilting theory from the point of view of mutations. In the first part of this talk we will explain the basics of τ-tilting theory and compare it to usual tilting theory and compute some easy examples. After, given a finite dimensional algebra A, we will study all basic support τ-tilting A-modules which have a given basic τ-rigid A-module as a direct summand. We will sketch the construction of a bijection between such A-modules and all support τ-tilting modules over an algebra C strongly related to U.