This is joint work with Osamu Iyama. Let $A$ be a finite dimensional algebra over an algebraically closed field. Then the numerical torsion pairs of Baumann-Kamnitzer-Tingley give an equivalence relation on the real Grothendieck group of finitely generated projective $A$-modules, which is called TF equivalence. By results of Yurikusa and Bruestle-Smith-Treffinger, we have that the g-vector cone of each 2-term presilting complex is a TF equivalence class. To get more TF equivalence classes, we can use canonical decompositions of elements in the (integral) Grothendieck group of finitely generated projectives introduced by Derksen-Fei. We have showed that the cone defined by the canonical decomposition of each element is contained in some single TF equivalence class. Moreover, we have also obtained that, if $A$ is an E-tame algebra, then this cone is precisely a TF equivalence class. In this talk, I will explain these results and some important steps to prove them.
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