

Filtrations in abelian categories determined by a tilting object

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A tilting object of projective dimension one in an abelian category determines a torsion pair and consequently every object has a two-step filtration. In this talk we will discuss a generalization to the case when the tilting object has arbitrary finite projective dimension. In particular we will show that if the projective dimension is two, there is a unique way to define extension-closed subcategories such that every object has a three-step filtration with the right properties.

This is joint work with Bernt Tore Jensen and Xuiping Su.