t-structures and cotilting modules over commutative noetherian rings

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Abstract. We will discuss three recent classification results over a commutative noetherian ring R: the classification of compactly generated t-structures in the unbounded derived category $\mathcal{D}(\text{Mod-}R)$ given in [1], the classification of tilting and cotilting classes in the module category Mod-R from [2], and the classification of resolving subcategories of the category $\mathcal{P}^{<\infty}$ of finitely generated R-modules of finite projective dimension achieved in [3]. Aim of my talk will be to give a unified approach to these results, as recently obtained in joint work with M. Saorín.

References

[1] Alonso, Jeremías, Saorín, Compactly generated t-structures on the derived category of a Noetherian ring. Journal of Algebra **324** (2010), 313–346.
[2] L. Angeleri Hügel, D. Pospíšil, J. Šťovíček, J. Trlifaj, Tilting, cotilting, and spectra of commutative noetherian rings. Transactions of the Amer. Math. Soc., to appear.
[3] H. Dao, R. Takahashi, Classification of resolving subcategories and grade consistent functions, http://arxiv.org/pdf/1202.5605v1.pdf (2012).