

Neeman recently settled a conjecture by Antieau, Gepner and Heller on the existence of bounded t - structures on the derived category of perfect complexes. We prove a triangulated categorical generalisation of that theorem. In particular, we will show that the existence of a bounded t - structure implies that the singularity category, appropriately defined, vanishes. To achieve this, we also introduce the notion of finitistic dimension for a classically generated triangulated category. Finally, we also show that all t - structures on the completion under these hypotheses are equivalent. This proves that all bounded t - structures on the bounded derived category of a noetherian finite dimensional scheme are equivalent, generalising a result by Neeman. This is joint work with Rudradip Biswas, Hongxing Chen, Chris Parker, and Junhua Zheng.