

# Categorical resolutions of filtered schemes

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## **Abstract**

A. Kuznetsov and V. Lunts showed that over a field of characteristic zero one can always construct a categorical resolution of singularities. Their approach requires a strong version of Hironaka's resolution of singularities, namely that any variety can be resolved by a sequence of blow-ups along smooth centres. In the first part of the talk I will introduce categorical resolutions and Kuznetsov–Lunts' results. Thereafter I will discuss my recent work in which the use of strong Hironaka is circumvented: only the existence of projective resolutions is needed. For this the framework of filtered schemes is paramount. Finally, if time permits, I will briefly explain ongoing work with M. Van den Bergh on generalising the construction to certain mild noncommutative varieties.