

# DERIVING ONE-SIDED EXACT CATEGORIES

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Abstract:

When  $\mathcal{S}$  is a Serre subcategory of an abelian category  $\mathcal{A}$ , it is well known that the quotient functor  $\mathcal{A} \rightarrow \mathcal{A}/\mathcal{S}$  lifts to a Verdier localization functor  $D^b(\mathcal{A}) \rightarrow D^b(\mathcal{A}/\mathcal{S})$ . This establishes certain desirable homological and  $K$ -theoretical properties.

In this talk, we consider a similar setup starting from a percolating subcategory  $\mathcal{S}$  in a one-sided exact category  $\mathcal{A}$ . The aim of this talk is twofold. In the first part, we give the construction of the derived category (following S. Bazzoni and S. Crivei) and establish that the quotient functor lifts to a similar Verdier localization functor  $D^b(\mathcal{A}) \rightarrow D^b(\mathcal{A}/\mathcal{S})$ .

In the second part, we consider the theory of glider representations of group algebras (as studied by F. Caenepeel and F. Van Oystaeyen) and show that this category is derived equivalent to the category of modules over a semi-Hopf category (as introduced by E. Batista, S. Caenepeel, and J. Vercruyse). These results are based on joint work with Ruben Henrard.