LOCALIZATIONS OF ONE-SIDED EXACT CATEGORIES

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Abstract:
A Quillen exact category is an additive category with a chosen class of kernel-cokernel pairs, called *conflations*, satisfying several axioms. The axioms can be partitioned into axioms referring only to the kernel part of a conflation (called an *inflation*) and those referring to the cokernel part of a conflation (called a *deflation*). This leads to the notions of *inflation-exact* and *deflation-exact* categories by keeping one such set of axioms. Recently, S. Bazzoni, S. Crivei and W. Rump showed that these types of categories still admit rich homological theories. Non-additive versions of one-sided exact categories have been studied by F. Borceux, D. Bourn and A. Rosenberg.
In this talk we consider quotients of one-sided exact categories with respect to *percolating* subcategories. This generalizes quotients of abelian categories by Serre subcategories. Moreover, our framework extends earlier localization theories for exact categories. In particular, we can consider the quotient of locally compact abelian groups by compact abelian groups. As a second application, we provide a categorical framework for the theory glider representations developed by F. Caenepeel and F. Van Oystaeyen. These results are based on joint work with Adam-Christiaan van Roosmalen.