

P -localizing group extensions with a finite kernel.

by

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Abstract: Assume P is a family of primes. The P -localization functor $(\)_P$ has been studied in great detail for nilpotent groups; however, its properties for most other groups remain obscure. One avenue to a better understanding of this functor is to determine its effect on short exact sequences of groups. In this talk, we discuss some recent results in this vein. In particular, if $1 \rightarrow N \xrightarrow{\iota} G \xrightarrow{\epsilon} Q \rightarrow 1$ is an exact sequence of groups with N finite, we observe that the sequence $N_P \xrightarrow{\iota_P} G_P \xrightarrow{\epsilon_P} Q_P \rightarrow 1$ is exact. Moreover, we provide an explicit description of $\text{Ker } \iota_P$ in the case where Q belongs to a certain class of groups that properly contains the class of nilpotent groups. This result may be used to generalize some of the familiar properties of P -localization for nilpotent groups to finite-by-nilpotent groups.