

## Products in categories of fractions and universal inversion of homomorphisms

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### Abstract

Main result. If finite direct products exist in a category  $k$  and the class of morphisms  $\Sigma$  is such that the category of fractions  $k[\Sigma^{-1}]$  exists, where  $\sigma \in \Sigma$  implies that  $\sigma \times 1_X \in \Sigma$  and  $1_X \times \sigma \in \Sigma$  for any objects  $X$ , then finite direct products also exist in  $k[\Sigma^{-1}]$  and the canonical functor  $k \rightarrow k[\Sigma^{-1}]$  preserves these products. Using this theorem analogues of the theory of matrix localization of rings are constructed for arbitrary varieties of universal algebras and for preadditive categories.

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