

Title: Compact objects in categories of modules

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Abstract: In the thesis we state basic properties of compact objects in various appropriate categories like categories of modules, stable factor category over a perfect ring and Grothendieck categories. We find a ring  $R$  such that the class of dually slender  $R$ -modules is closed under direct products under some set-theoretic assumption. Finally, we characterize the conditions, when countably generated projective modules are finitely generated, expressed by their Grothendieck monoid.

Keywords: compact, dually slender module, stable module category, projective module, self-small