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Almost preenvelopes of commutative rings. (English) Zbl 1252.13005

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Summary: We study almost \mathcal{F} -preenvelopes in the category of rings, for a significative class \mathcal{F} of commutative rings. We completely identify those rings which have an almost \mathcal{F} -preenvelope when \mathcal{F} is the class of fields, semisimple rings, integer domains and local rings. We show that rings with Krull dimension zero have (almost) \mathcal{V} -preenvelopes, where \mathcal{V} is the class of von Neumann regular rings.

MSC:

13C05 Structure, classification theorems for modules and ideals in commutative rings

16S10 Associative rings determined by universal properties (free algebras, coproducts, adjunction of inverses, etc.)

18B99 Special categories

Keywords:

almost preenvelopes; semiprimitive rings; local rings; von Neumann regular rings

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