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The cotorsion dimension of rings. (Chinese. English summary) Zbl 07448868
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Summary: In this paper, we first study the cotorsion dimension over Milnor squares, and then discuss the relationship and difference between the cotorsion dimension of rings and the global dimension, the weak global dimension. We prove that the cotorsion dimension of a Prüfer domain is at most 1 if and only if it is a Matlis domain whose global dimension is less than or equal to 2.

MSC:
13D05 Homological dimension and commutative rings
13F05 Dedekind, Prüfer, Krull and Mori rings and their generalizations

Keywords:
cotorsion dimension; Milnor square; the global dimension; relationship and difference; Prüfer domain; Matlis domain

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