

MR1015536 (90i:13010) 13C05**Wiegand, Roger (1-NE)****Noetherian rings of bounded representation type.**

Commutative algebra (Berkeley, CA, 1987), 497–516, *Math. Sci. Res. Inst. Publ.*, 15, Springer, New York, 1989.

Let R be a reduced Noetherian commutative ring of Krull dimension 1 whose normalization \tilde{R} is a finitely generated R -module. This paper studies the question of whether there is a bound $\beta(R)$ to the ranks of all torsionfree finitely generated R -modules M , i.e. a positive integer $\beta(R) \geq$ the dimension of the vector space $M_{\mathfrak{p}}$ over the field $R_{\mathfrak{p}}$ for every minimal prime ideal \mathfrak{p} and every M . The author studies the relation between the existence of $\beta(R)$ and the following two “DR”-conditions, previously studied by Drozd and Roĭter: \tilde{R} is generated, as an R -module, by three elements; and the Jacobson radical of the R -module \tilde{R}/R is cyclic.

This paper is partly expository and partly new research. It extends results of Green, Reiner and Jacobinski, whose work applied to the rings that occur in integral representation theory, and it clarifies work of Drozd and Roĭter. The author shows that the DR conditions are necessary for the existence of $\beta(R)$, and that they are sufficient except when \tilde{R}/\mathfrak{m} is a degree-2 or degree-3 inseparable extension of $R/(\mathfrak{m} \cap R)$ for some maximal ideal \mathfrak{m} of \tilde{R} . It is not known whether the exceptional cases are true exceptions. The paper contains an interesting discussion of issues related to its main theorems.

{For the entire collection see [MR1015509 \(90d:13001\)](#)}

Reviewed by [Lawrence S. Levy](#)

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