

Arnold, J. T.

The catenarian property of power series rings over a Prüfer domain. (English) Zbl 0577.13010
Proc. Am. Math. Soc. 94, 577-580 (1985).

The author has defined previously an ideal A of a commutative ring R to be of strong finite type provided there is a finitely generated ideal B of R with $B \subseteq A$ and a positive integer k such that $a^k \in B$ for each $a \in A$; the ring R is said to have the SFT-property provided that each ideal of R is of strong finite type. This paper is concerned with a Prüfer domain D that has the SFT-property: the main results are that the power series ring $D[[X]]$ is catenarian, but that if $n > 1$ and $\dim D > 1$ then the power series ring $D[[X_1, \dots, X_n]]$ is not catenarian.

Reviewer: [R.Y.Sharp](#)

MSC:

- [13E99](#) Chain conditions, finiteness conditions in commutative ring theory
- [13F25](#) Formal power series rings
- [13F05](#) Dedekind, Prüfer, Krull and Mori rings and their generalizations
- [13C15](#) Dimension theory, depth, related commutative rings (catenary, etc.)
- [13E15](#) Commutative rings and modules of finite generation or presentation; number of generators

Cited in **6** Documents

Keywords:

valuation ring; strong finite type; SFT-property; Prüfer domain; power series ring; catenarian

Full Text: [DOI](#)