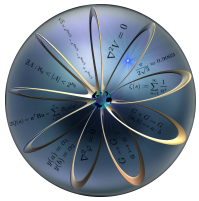

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Jaffard ring

Canonical name	JaffardRing
Date of creation	2013-03-22 15:22:15
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Owner	mathcam (2727)
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Entry type	Definition
Classification	msc 13F05
Defines	Jaffard domain
Defines	Jaffard

Let dim denote Krull dimension. A *Jaffard* ring is a ring A for which $\dim(A[x]) = \dim(A) + 1$ (compare to the bound on the Krull dimension of polynomial rings). Such a ring is said to be *Jaffardian*.

Since this condition holds for Noetherian rings, every Noetherian ring is Jaffardian. Examples of rings that are not Jaffardian are thus relatively difficult to come by, since we are already forced to search exclusively in the realm of non-Noetherian rings. The first example of a non-Jaffardian ring seems to have been found by A. Seidenberg [**?**]: the subring of $\overline{\mathbb{Q}}[[T]]$ consisting of power series whose constant term is rational.

A *Jaffard domain* is a Jaffard ring which is also an integral domain.

References

[Seid] A. Seidenberg, *A note on the dimension theory of rings.* Pacific J. of Mathematics, Volume 3 (1953), 505-512.