

# ALGEBRAIC PROPERTIES OF SPECIAL RINGS OF FORMAL SERIES

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The  $K$ -algebra  $K_S[[X]]$  of Newton interpolating series is constructed by means of Newton interpolating polynomials with coefficients in an arbitrary field  $K$  (see Section 1) and a sequence  $S$  of elements  $K$ . In this paper we prove that this algebra is an integral domain if and only if  $S$  is a constant sequence. If  $K$  is a non-archimedean valued field we obtain that a  $K$ -subalgebra of convergent series of  $K_S[[X]]$  is isomorphic to Tate algebra (see Theorem 3) in one variable and by using this representation we obtain a general proof of a theorem of Strassman (see Corollary 1). In the case of many variables other results can be found in [2].

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