On Structure of Ideals in Skew Polynomial Rings over HNP Rings

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An elegant and strong theory on noncommutative Noetherian rings has been developed in several groundbreaking works over the second half of the 20th century following the pioneering research of Alfred Goldie in the 1960s. The theory is still an active research area in Algebra and features many important classes of rings such as matrix rings, polynomial rings, differential operator rings, group rings, Lie algebras, etc. My talk is based on some new results related to the theory of ideals in noncommutative rings and we shall be mostly concerned with Noetherian prime rings, in which case the localization is always possible at the zero ideal and the resulting localized rings is a simple Artinian overring of our original ring. After a very brief overview of some noncommutative analogues of commutative Dedekind domains, we shall turn our attention to the structure of ideals in skew polynomial rings over hereditary Noetherian prime rings (or, HNP-rings, for short). The majority of the new results to be presented appear in [1].

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