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PIERCE STALKS OF SEMIRINGS OF SKEW POLYNOMIALS

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It is known that an arbitrary semiring with unity is isomorphic to the semiring of sections of its Pierce sheaf. The structure of the Pierce sheaf was actively used in the study of algebras with a nontrivial set of central idempotents. In particular, there are many results in which rings or semirings are described in terms of their Pierce stalks. Semirings with some additional conditions on the annihilators such as Rickart, strongly Rickart, and quasi-Baer semirings are studied in the paper. The main object of study is a semiring $R = S[x, \varphi]$ of skew polynomials over the semiring S . Let R be a strongly Rickart, Rickart without nilpotent elements, or quasi-Baer semiring, and let an endomorphism φ be injective or rigid. Characterizations of the semiring R are obtained. Connections are established between R and the properties of the semiring S and the Pierce stalks of the semiring R or S .

Keywords: semiring of skew polynomials, Pierce stalks, Rickart semiring, quasi-Baer semiring.

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