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Strongly right bounded left near-rings

The aim of this paper is to introduce the concept of strongly right bounded (SRB) to the variety of left near-rings (l. n. r.) and study some recent results concerning SRB rings for l. n. r. We proved:

– A l. n. r. R is SRB (SRB*) if and only if every nonzero right ideal (right R-subgroup) of R is an essential extension of a nonzero ideal of R, moreover we characterized the largest ideal of R contained in xR for each nonzero element x in the SRB* l. n. r. R.

– A l. n. r. R is SRB* if and only if the prime radical $P(R)$ of R is SRB* ideal of R and R contains a reduced SRB* ideal K of R such that $P(R)+K$ is an essential in R as a right R-subgroup of R.

– Every semiprime l. n. r. contains a unique maximal SRB* ideal.

– Direct sums and direct products of a family of l. n. r. are SRB (SRB*) if and only if each l. n. r. of the family is SRB (SRB*).

– A direct summand ideal of an SRB l. n. r. is again an SRB l. n. r.

– The right socle of an SRB l. n. r. is a direct sum of minimal ideals.