

STRONG EXCHANGE RINGS

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Abstract: Two elements a, b in a ring R form a right coprime pair, written $\langle a, b \rangle$, if $aR + bR = R$. Right coprime pairs have shown to be quite useful in the study of left cotorsion or exchange rings. In this paper, we define the class of right strong exchange rings in terms of descending chains of them. We show that they are semiregular and that this class of rings contains left injective, left pure-injective, left cotorsion, local, and left continuous rings. This allows us to give a unified study of all these classes of rings in terms of the behaviour of descending chains of right coprime pairs.

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Key words: exchange rings, von Neumann regular rings, semiregular rings, (pure-)injective rings, coprime pair.