STRONGLY DRAZIN INVERSE IN RINGS

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Abstract. An element $a \in R$ has strongly Drazin inverse if there exists $a' \in R$ such that $aa' = a' = d'ad'$ and $a - ad' \in R$ is nilpotent, i.e., $a$ is strongly nil-clean. Additive results for strongly Drazin inverse in a ring are presented. The explicit formulas for such generalized inverse of $a + b$ are given. These extend the results on $s$-Drazin and Drazin inverses of Wang (Filomat, 31(2017), 1781–1789), Yang and Liu (J. Comput. Appl. Math., 235(2011), 1412–1417). As an application, we give various conditions under which a $2 \times 2$ block matrix has $s$-Drazin inverse.


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REFERENCES