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Exchange rings generated by their units

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摘要 假设 R 为本原分式Artinian环,证明了有 $u \in U(R)$ 使得 $1_R \setminus pm u \in U(R)$ 当且仅当对任何 $a \in R$, 有 $u \in U(R)$ 使得 $a \setminus pm u \in U(R)$. 进一步, 证明了 对任何 $A \in M_n(R) (n \geq 2)$, 有 $U \in GL_n(R)$ 使得 $A \setminus pm U \in GL_n(R)$. 作为应用得到了强 π -正则环中任何元素的二倍由二个可逆元生成.

关键词 [置换环](#) [本原分式环](#) [强 \$\pi\$ -正则环](#)

分类号 [16E50](#)

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Abstract Let R be an exchange ring with primitive factors artinian. We prove that there exists a $u \in U(R)$ such that $1_R \setminus pm u \in U(R)$ if and only if for any $a \in R$, there exists a $u \in U(R)$ such that $a \setminus pm u \in U(R)$. Furthermore, we prove that for any $A \in M_n(R) (n \geq 2)$, there exists a $U \in GL_n(R)$ such that $A \setminus pm U \in GL_n(R)$. As an application, we prove that two copy of every element in a strongly π -regular ring is generated by two units.

Key words [Exchange Ring](#) [Primitive Factors Artinian](#) [Strongly \$\pi\$ -Regular Ring](#)

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