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Residually finite subrings of the ring of algebraic integers

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Abstract - A commutative unitary ring A, which is neither finite nor a field, is called **residually finite ring** (RF-ring) if the quotient ring A/I is finite for every nonzero ideal I of A. Let $\mathbf{A}$ be the ring of all algebraic integers, i.e. the set of complex roots of the monic polynomials from $\mathbb{Z}[X]$. If K is a subfield of $\mathbb{C}$ such that $[K:\mathbb{Q}] < \infty$, then the ring $A = K \cap \mathbf{A}$ is a RF-ring. In this note all the RF-subrings of $\mathbf{A}$ are determined.

Key words and phrases : rings of algebraic integers, residually finite ring, decomposition number, ramification index, residual degree.

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