Park, S.-M.; Lee, G.-N.

The class number one problem for some totally complex quartic number fields. (English)


Let $K$ be a totally complex quartic field whose class number is equal to 1. The authors prove that there are 95 non-isomorphic fields $K$ whose rings of algebraic integers are generated by an algebraic unit. Moreover, they prove Louboutin’s conjecture according to which a totally complex quartic unit $\varepsilon$ generally generates the unit group of the quartic order $\mathbb{Z}[\varepsilon]$.

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MSC:

11R29 Class numbers, class groups, discriminants
11R27 Units and factorization
11R16 Cubic and quartic extensions

Keywords:
quartic field; fundamental unit; class number

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References:


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