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An explicit Baker-type lower bound of exponential values. (English) Zbl 1387.11059
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Summary: Let \mathbb{I} denote an imaginary quadratic field or the field \mathbb{Q} of rational numbers and let $\mathbb{Z}_{\mathbb{I}}$ denote its ring of integers. We shall prove a new explicit Baker-type lower bound for a $\mathbb{Z}_{\mathbb{I}}$ -linear form in the numbers $1, e^{\alpha_1}, \dots, e^{\alpha_m}$, $m \geq 2$, where $\alpha_0 = 0, \alpha_1, \dots, \alpha_m$ are $m + 1$ different numbers from the field \mathbb{I} . Our work gives substantial improvements on the existing explicit versions of Baker's work about exponential values at rational points. In particular, dependencies on m are improved.

MSC:

[11J82](#) Measures of irrationality and of transcendence

[11J72](#) Irrationality; linear independence over a field

Cited in **5** Documents

Keywords:

[lower bound of linear form](#); [transcendence measure](#); [Siegel's lemma](#)

Full Text: [DOI](#) [arXiv](#)

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