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Some Questions of Number-theoretical Method in Approximation Analysis

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Key words: optimal coefficients method, algebraic lattices, Gelfond theorem, hyperbolic zeta-function.

References

1. Korobov N. M. *Teoretiko-chislovye metody v priblizhennom analize* [Number-theoretic methods in approximations analysis]. Moscow, 2004 (in Russian).
2. Dobrovolskiy N. M. *Giperbolicheskaiia dzeta-funktsiia reshetok* [Hyperbolic zeta-function on lattices]. Tula, 1984. Dep. v VINITI 24.08.84, no. 6090-84 (in Russian).
3. Dobrovolskaya L. P., Dobrovolskiy M. N., Dobrovolskiy N. M., Dobrovolskiy N. N. *Giperbolicheskie dzeta-funktsii setok i reshetok i vychislenie optimal'nykh koeffitsientov* [Hyperbolic zeta-functions on nets and lattices and computation of optimal coefficients]. *Chebyshevskii sbornik* [Chebyshev collection], 2012, vol. 13, iss. 4(44), pp. 4–107 (in Russian).
4. Dobrovolskaya L. P., Dobrovolskiy M. N., Dobrovolskiy N. M., Dobrovolskiy N. N. *Mnogomernye teoretiko-chislovye setki i reshetki i algoritmy poiska optimal'nykh koeffitsientov* [Multidimensional number-theoretic nets and lattices and their applications]. Tula, State Pedagogic University Press, 2005, 195 p. (in Russian).
5. Dobrovolskiy N. M. *Mnogomernye teoretiko-chislovye setki i reshetki i ikh prilozheniya* [Multidimensional number-theoretic nets and lattices and their applications]. Tula, State Pedagogic University Press, 2005, 195 p. (in Russian).
6. Dobrovolskiy M. N. Funktsional'noe uravnenie dlja giperbolicheskoi dzeta-funktsii tselochislennykh reshetok [Functional equation of hyperbolic zeta-function on integral lattices]. *Vestn. Mosk. un-ta. Ser. 1. Matematika. Mekhanika*, 2007, iss. 3, pp. 18–23 (in Russian).