



UDC 511.3

On Universality of Certain Zeta-functions

A. Laurinčikas¹, R. Macaitienė², D. Mokhov³, D. Šiaučiusas⁴

¹Vilnius University, Naugarduko st. 24, LT-03225 Vilnius, Lithuania, antanas.laurincikas@mif.vu.lt

²Šiauliai University, P. Višinskio st. 19, LT-77156 Šiauliai, Lithuania, renata.macaitiene@mi.su.lt

³Vilnius University, Naugarduko st. 24, LT-03225 Vilnius, Lithuania, dmitrij.mochov@mif.vu.lt

⁴Šiauliai University, P. Višinskio st. 19, LT-77156 Šiauliai, Lithuania, siauciunas@fm.su.lt

It is well known that a generalization of the Hurwitz zeta-function — the periodic Hurwitz zeta-function with transcendental parameter is universal in the sense that its shifts approximate any analytic function. In the paper, the transcendence condition is replaced by a simpler one on the linear independence of a certain set.

Key words: periodic Hurwitz zeta-function, space of analytic functions, universality, weak convergence.

References

1. Javtokas A., Laurinčikas A. The universality of the periodic Hurwitz zeta-function. *Integral Transforms Spec. Funct.*, 2006, vol. 17, no. 10, pp. 711–722.
2. Cassels J. W. S. Footnote to a note of Davenport and Heilbronn. *J. London Math. Soc.*, 1961, vol. 36, pp. 171–184.
3. Laurinčikas A., Garunkštis R. *The Lerch Zeta-Function*. Dordrecht, Kluwer, 2002, 189 p.
4. Heyer H. *Probability Measures on Locally Compact Groups*. Berlin, Springer, 1977, 531 p.
5. Billingsley P. *Convergence of Probability Measures*. New York, Wiley, 1968, 272 p.
6. Javtokas A., Laurinčikas A. On the periodic zeta-function. *Hardy-Ramanujan J.*, 2006, vol. 29, pp. 18–36.
7. Mergelyan S. N. Uniform approximation to functions of complex variable. *Uspekhi Matem. Nauk*, 1952, vol. 7, pp. 31–122.