Lobachevskii Journal of Mathematics 2017 vol.38 N1, pages 44-47

The jump problem for certain Beltrami equation on arcs

Kats B., Mironova S., Pogodina A.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2017, Pleiades Publishing, Ltd.We consider the jump boundary problem on Jordan arc for solutions of certain Beltrami equations.

http://dx.doi.org/10.1134/S1995080217010103

Keywords

Beltrami equation, jump problem

References

[1] I. N. Vekua, Generalized Analytic Functions (Nauka, Moscow, 1988) [in Russian].

[2] B. Bojarski, “Old and new on Beltrami equations,” in Functional Analytic Methods in Complex Analysis and Applications to Partial Differential Equations, Proceedings of the ICTP Conference, Trieste, Italy, Feb, 8–19, 1988.

[3] T. Iwaniec and G. Martin, “What’s new for the Beltrami equation?,” in Proceedings of the National Research Symposium on Geometric Analysis and Applications June 26–30, 2000, Canberra, Proc. Centre Math. Appl. 39, 132–148 (2000).

[4] A. B. Tungatarov, “Properties of certain integral operator in classes of summable functions,” Izv. AN Kazakh. SSR, Ser. Fiz.-Mat. 132 (5), 58–62 (1985).

[5] R. Abreu-Blaya, J. Bory-Reyes, and D. Pena-Pena, “On the jump problem for ß-analytic functions,” Complex Var. Elliptic Equat. 51, 763–775 (2006).

[6] R. Abreu Blaya and J. Bory Reyes, “A property of the ß-Cauchy type integral with continuous density,” Ukr. Math. J. 60, 1683–1690 (2008).

[7] R. Abreu Blaya, J. Bory Reyes, D. Pena-Pena, and J.-M. Vilaire, “Riemann boundary value problem for analytic functions,” Int. J. Pure Appl.Math. 42, 19–37 (2008).

[8] R. Abreu-Blaya, J. Bory-Reyes, and J.-M. Vilaire, “A jump problem for ß-analytic functions in domains with fractal boundaries,” Rev. Mat. Comput. 23, 105–111 (2010). doi 10.1007/s13163-009-0002-2

[9] R. Abreu-Blaya, J. Bory-Reyes, and J.-M. Vilaire, “The Riemann boundary value problem for ß-analytic functions over D-summable closed curves,” Int. J. Pure Appl.Math. 75, 441–453 (2012).

[10] F. D. Gakhov, Boundary Value Problems, 3rd ed. (Nauka, Moscow, 1977) [in Russian].

[11] Jian-Ke Lu, Boundary Value Problems for Analytic Functions (World Scientific, Singapore, 1993).

[12] E. M. Stein, Singular Integrals and Differential Properties of Functions (Princeton Univ. Press, Princeton, 1970).

[13] B. A. Kats and D. B. Katz, Marcinkiewicz Exponents and Integrals over Non-Rectifiable Paths, Wiley Online Library (2015). doi 10.1002/mma.3787

[14] D. Katz, “The Marcinkiewicz exponent with applications,” in Proceedings of the 9th ISAAC Congress, Krakow, Aug. 5–10, 2013, pp. 106–107.

[15] D. B. Katz, “New metric characteristics of non-rectifiable curves with applications,” Sib. Math. J. 57, 364–372 (2016).

[16] D. B. Katz, “Local and weighted Marcinkiewicz exponents with applications,” J. Math. Anal. Appl. 440, 74–85 (2016). doi 10.1016/j.jmaa.2016.03.00