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Determination of the Boundary in the Local Charzynski–Tammi Conjecture for the Fifth Coefficient

V. G. Gordienko, K. A. Samsonova

Saratov State University, Russia, 410012, Saratov, Astrahanskaya st., 83, valeriygor@mail.ru, kris-ruzhik@mail.ru

In this article we find the exact value of M_5 such that the symmetrized Pick function $P_{M_4}(z)$ is an extreme in the local Charzynski–Tammi conjecture for the fifth Taylor coefficient of the normalized holomorphic bounded univalent functions

Key words: Löwner equation, optimum control, Pontryagin maximum principle.

References

1. Branges L. A proof of the Bieberbach conjecture. *LOMI Preprints* E-5-84, 1984, pp. 1–21.
2. Branges L. A proof of the Bieberbach conjecture. *Acta Math.*, 1985, vol. 154, no 1–2, pp. 137–152.
3. Pick G. Über die konforme Abbildung eines Kreises auf ein schlichtes und zugleich beschränktes Gebiet. *S.-B. Kaiserl. Akad. Wiss. Wien. Math., Naturwiss. Kl. Abt. II a*, 1917, B. 126, pp. 247–263.
4. Schaeffer A. C., Spencer D. C. The coefficients of schlicht functions. *Duke Math. J.*, 1945, vol. 12, pp. 107–125.
5. Schiffer M., Tammi O. On the fourth coefficient of bounded univalent functions. *Trans. Amer. Math. Soc.*, 1965, vol. 119, pp. 67–78.
6. Siewierski L. Sharp estimation of the coefficients of bounded univalent functions near the identity. *Bull. Acad. Polon. Sci.*, 1968, vol. 16, pp. 575–576.
7. Siewierski L. Sharp estimation of the coefficients of bounded univalent functions close to identity. *Dissertationes Math. (Rozprawy Mat.)*, 1971, vol. 86, pp. 1–153.
8. Schiffer M., Tammi O. On bounded univalent functions which are close to identity. *Ann. Acad. Sci. Fenn. Ser. AI Math.*, 1968, vol. 435, pp. 3–26.
9. Prokhorov D. V., Gordienko V. G. Definition of the boundary in the local Charzynski–Tammi conjecture. *Russ. Math. (Izvestiya VUZ. Matematika)*, 2008, vol. 52, no. 9, pp. 51–59.
10. Prokhorov D. V. Sets of values of systems of functionals in classes of univalent functions. *Mathematics of the USSR-Sbornik*, 1992, vol. 71, no. 2, pp. 499–516.
11. Pontryagin L. S., Boltyanskii V. G., Gamkrelidze R. V., Mischenko E. F. *Matematicheskaya teoriya optimal'nykh protsessov* [The Mathematical Theory of Optimal Processes], Moscow, Nauka, 1969, 384 p. (in Russian).