

A factor of integer polynomials with minimal integrals

Carlo Sanna
Università di Torino

We give a quick description of an elementary and clever method of Gelfond, Shnirelman, and Nair to prove lower bound for the Chebyshev's function $\psi(x)$. This method leads to the study of the set S_N of polynomials with integer coefficients, degree less than N , and minimal nonzero integral over $[0, 1]$.

In particular, Bazzanella proved some results about the factors of the polynomials in S_N . We illustrate an improvement of these results and we raise some open questions.

Riferimenti bibliografici

- [1] E. Aparicio Bernardo, *On the asymptotic structure of the polynomials of minimal Diophantic deviation from zero*, J. Approx. Theory **55** (1988), no. 3, 270–278.
- [2] D. Bazzanella, *A note on integer polynomials with small integrals*, Acta Math. Hungar. **141** (2013), no. 4, 320–328.
- [3] D. Bazzanella, *A note on integer polynomials with small integrals. II*, Acta Math. Hungar. **149** (2016), no. 1, 71–81.
- [4] P. Borwein and T. Erdélyi, *The integer Chebyshev problem*, Math. Comp. **65** (1996), no. 214, 661–681.
- [5] M. Nair, *A new method in elementary prime number theory*, J. London Math. Soc. (2) **25** (1982), no. 3, 385–391.
- [6] C. Sanna, *A factor of integer polynomials with minimal integrals*, J. Théor. Nombres Bordeaux (to appear).