IFSCOM-E 2023

9TH IFS AND CONTEMPORARY MATHEMATICS AND ENGINEERING CONFERENCE

08-11 July 2023 Tarsus, Mersin, Türkiye

ISBN: 978-605-68670-9-5

pp: 138

ON A NEW CLASS OF HYPERBOLIC FIBONACCI FUNCTIONS VIA SOME SPECIAL POLYNOMIALS

SURE KÖME AND YASİN YAZLIK

0000-0002-3558-0557 and 0000-0001-6369-540X

ABSTRACT

In recent years, many researchers have studied hyperbolic Fibonacci functions and some special polynomials, which are important areas of mathematics. In this study, we give an extension of the Euler polynomials in order to obtain the correlation between the hyperbolic Fibonacci functions and Euler polynomials. We define symmetrical Fibonacci sine and symmetrical Fibonacci cosine functions for some special Euler polynomials. Moreover, we derive new identities for these types of symmetrical Fibonacci functions by using analytical techniques.

References

- $[1]\,$ T. Koshy, Fibonacci and Lucas numbers with applications, (2001).
- [2] A. Stakhov and B. Rozin, On an new class of hyperbolic functions, Chaos, Solitons & Fractals, Vol.23, N.2, pp.379-389 (2005).
- [3] Q.-M. Luo, F. Qi and L. Debnath, Generalizations of Euler numbers and polynomials, International Journal of Mathematics and Mathematical sciences, Vol.2003, No.61, pp.3893-3901, (2003)
- [4] H. Srivastava, M. Garg and S. Choudhary, Some new families of generalized Euler and Genocchi polynomials, Taiwanese Journal of Mathematics, Vol.15, No.1, pp.283-305, (2011).

Nevşehir Hacı Bektaş Veli University, Department of Mathematics, 50300, Nevşehir, TURKEY

 $Email\ address: {\tt sure.kome@nevsehir.edu.tr}$

Nevşehir Hacı Bektaş Veli University, Department of Mathematics, 50300, Nevşehir, TURKEY

 $Email\ address: {\tt yyazlik@nevsehir.edu.tr}$

Date: July, 8, 2023.

²⁰⁰⁰ Mathematics Subject Classification. 11B68, 11B39, 11C08.

Key words and phrases. Hyperbolic Fibonacci functions, Euler numbers, Euler polynomials.