
AN INTRODUCTION TO BLAISE AND BLAISE-LUCAS VECTORS

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ABSTRACT

Integer sequences have been extensively studied due to their rich structure and numerous applications. New approaches have been developed to the study of number sequences, with particular emphasis on their vector representation, as seen, for example, in [2], where Çetinberk and Yüce studied the vector products of the Fibonacci 3-vectors, 4-vectors and 7-vectors; Bingöl and Gökbaş, in [1], presented the inner product, norm and vector products for the Horadam vectors.

In this paper, we devote our attention on the investigation of Blaise numbers and Blaise–Lucas numbers sequences. These number sequences were presented by Soykan in [3], where several of their properties were introduced, in particular the relations between Blaise, Blaise-Lucas and Adjusted Jacobsthal-Padovan, Jacobsthal-Perrin (Jacobsthal-Perrin-Lucas), Jacobsthal-Padovan, and modified Jacobsthal-Padovan numbers. Uysal et al in [4] studied a quaternionic sequence using these types of numbers. The aim of this work is to introduce the vector representations of Blaise and Blaise–Lucas numbers and study some of its properties.

Keywords Blaise numbers · Blaise-Lucas numbers · Blaise n -vector · Blaise-Lucas n -vector · linear algebra

References

- [1] Bingöl, R., Gökbaş, H., Some properties of Horadam Vectors, *Advances in Mathematics: Scientific Journal*, 13(4): 523–532, 2024.
- [2] Çetinberk, K., Yüce, S., On Fibonacci Vectors, *Hagia Sophia Journal of Geometry*, 2(2): 12–25, 2020.
- [3] Soykan Y., A Study on Generalized Blaise Numbers, *Asian Journal of Advanced Research and Reports* 17(1): 32-53, 2023.
- [4] Uysal M., Özkan E. and Soykan Y., Quaternions whose components are Blaise and Blaise-Lucas numbers, *Palestine Journal of Mathematics*, 15(1): 378–394, 2026.

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