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## A NEW GENERALIZATION OF FRANK MATRIX

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### ABSTRACT

In this presentation, we will introduce a novel two-parameter generalization of the well-known Frank matrices and their Hadamard inverse, examine their linear algebraic properties, and present the results with numerical examples.

**Keywords** Frank Matrix · Special Matrices · Matrix Factorization

### References

- [1] Frank, Werner L. "Computing eigenvalues of complex matrices by determinant evaluation and by methods of Danilewski and Wielandt." *Journal of the Society for Industrial and Applied Mathematics* 6.4 (1958): 378-392.
- [2] Mersin, E. Ö., Bahşi, M., Maden, A. D. (2020). Some Properties of Generalized Frank Matrices. *Mathematical Sciences and Applications E-Notes*, 8(2), 170-177. <https://doi.org/10.36753/mathenot.672621>
- [3] Shi, Baijuan, and Can Kızılateş. "A new generalization of the Frank matrix and its some properties." *Computational and Applied Mathematics* 43.1 (2024): 19.

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