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Abstract

Generalized Circulant Matrices †

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Circulant matrices have applications in signal processing, numerical calculations of Fourier transforms, as well as encryption methods. By using a coset group construction of algebras [1], we find a class of generalized circulant matrices with interesting and possibly useful properties for numerical analysis that can expand the use of simple circulants. We show the construction of generalized circulants and discuss their properties and possible applications.

Reference

1. Petrache, H.I. Coset group construction of multidimensional number systems. *Symmetry* **2014**, *6*, 578–588.



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