



Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Teduh Wulandari Mas'oed
Assignment title: Kumpulan Artikel 2022
Submission title: On the Explicit Formula for Eigenvalues, Determinant, and In...
File name: Eigenvalues,_Determinant,_and_Inverse_of_Circulant_Matrice...
File size: 448.4K
Page count: 12
Word count: 4,640
Character count: 19,478
Submission date: 29-Apr-2022 10:58PM (UTC+0700)
Submission ID: 1823943086



JTAM (Jurnal Teori dan Aplikasi Matematika)
<http://jurnal.unpas.ac.id/index.php/jtam>
p-ISSN 2597-7512 | e-ISSN 2614-1175
Vol. X, No. Y, Month 20XX, pp. XX-YY

On the Explicit Formula for Eigenvalues, Determinant, and Inverse of Circulant Matrices

Nur Aliatiningtyas¹, Sugi Guritman², and Teduh Wulandari³
^{1,2,3}Division of Pure Mathematics
Department of Mathematics
Faculty of Mathematics and Natural Sciences
IPB University
Jl. Meranti, Kampus IPB, Kec. Dramaga, Kabupaten Bogor, Jawa Barat 16680
nurali@apps.ipb.ac.id, sugigu@apps.ipb.ac.id, teduhma@apps.ipb.ac.id

ABSTRACT

Article History:
Received : D-M-20XX
Revised : D-M-20XX
Accepted : D-M-20XX
Online : D-M-20XX

Keyword:
Circulant matrix;
Eigenvalue;
Determinant;
Inverse;
Cyclic group.



 <https://doi.org/10.31764/jtam.v10y.222>

 This is an open access article under the CC-BY-SA license

A. INTRODUCTION

Discussion about circulant matrices has become more interesting research topics over last decades because of those can be associated with many areas of mathematical problems: numerical analysis, linear differential equations, operator theory, lightweight cryptography, and many others; and hence also connected to computer science and engineering. All of those take an advantage the nice structure of circulant matrix that the calculation of eigenvalues, eigenvectors, determinant, and inverse of the matrices can be formulated explicitly. This is what we concern, so in this paper we propose a kind of overview to derive the formulations based on exploitation of cyclic group properties.

To broaden our insight, we refer to some papers that recently have studied the above problem with various specializations. Without intending to exclude any other articles whose similar topics to this topic but missed from our consideration, we start in 2012, (Aldous Cesar F. Bueno, 2012) formulated the eigenvalues, determinant, inverse circulant matrices with