



# Document details

< Back to results | 1 of 1

↗ Export Download Print E-mail Save to PDF Add to List More... >

[Full Text](#) View at Publisher

Miskolc Mathematical Notes [Open Access](#)  
Volume 17, Issue 1, 2016, Pages 457-470

## On volterra and orthogonality preserving quadratic stochastic operators (Article) [\(Open Access\)](#)

Mukhamedov, F. ✉, Taha, M.H.B.M. 👤

International Islamic University Malaysia, Faculty of Science, Department of Computational and Theoretical Sciences, P.O. Box, 141, Kuantan, Pahang, 25710, Malaysia

### Abstract

View references (30)

A quadratic stochastic operator (in short QSO) is usually used to present the time evolution of differing species in biology. Some quadratic stochastic operators have been studied by Lotka and Volterra. In the present paper, we first give a simple characterization of Volterra QSO in terms of absolutely continuity of discrete measures. Moreover, we provide its generalization in continuous setting. Further, we introduce a notion of orthogonal preserving QSO, and describe such kind of operators defined on two dimensional simplex. It turns out that orthogonal preserving QSOs are permutations of Volterra QSO. The associativity of genetic algebras generated by orthogonal preserving QSO is studied too. © 2016 Miskolc University Press.

### SciVal Topic Prominence ⓘ

Topic: Algebra | Quadratic | Cubic stochastic

Prominence percentile: 66.591 ⓘ

### Author keywords

Orthogonal preserving Quadratic stochastic operator Volterra operator

ISSN: 17872405

Source Type: Journal

Original language: English

DOI: 10.18514/MMN.2016.1090

Document Type: Article

Publisher: University of Miskolc

### References (30)

View in search results format >

All Export Print E-mail Save to PDF Create bibliography

### Metrics ⓘ View all metrics >

9 Citations in Scopus

2.30 Field-Weighted Citation Impact



### PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

### Cited by 9 documents

On orthogonality preserving cubic stochastic operator defined on 1-dimensional simplex

Mukhamedov, F. , Pah, C.H. , Rosli, A.  
(2019) *AIP Conference Proceedings*

Infinite dimensional orthogonality preserving nonlinear Markov operators

Mukhamedov, F. , Fadillah Embong, A.  
(2019) *Linear and Multilinear Algebra*

On non-linear Markov operators: surjectivity vs orthogonal preserving property

Mukhamedov, F. , Embong, A.F.  
(2018) *Linear and Multilinear Algebra*

View all 9 citing documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

Related documents