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 c. Vol, No., Bln Thn : Vol. 16, No.3, tahun 2022
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Nama : Prof. Dr. Sunarsih, M.Si
 NIP. : 195809011986032002
 Unit Kerja : FSM Undip
 Bidang Ilmu: Matematika

Semarang,
 Reviewer 2



Nama : Bayu Surarso, Ph.D
 NIP. : 196311051988031001
 Unit Kerja : FSM Undip
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Semarang, 12 Maret 2023

Reviewer 1



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Unit Kerja : FSM Undip

Bidang Ilmu: Matematika

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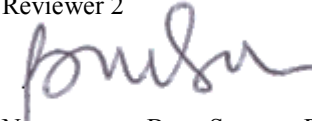
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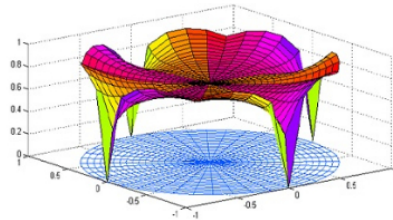


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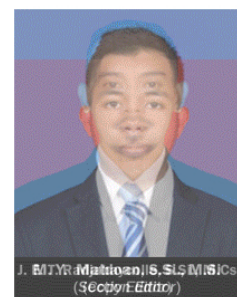


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AN EXISTENCE AND UNIQUENESS OF THE WEAK SOLUTION OF THE DIRICHLET PROBLEM WITH THE DATA IN MORREY SPACES

Nicky K. Tumulun *

Mathematics Department, Faculty of Mathematics and Natural Sciences, **Universitas Negeri Manado**
Tataran-Remboken St., Kec. Tondano Selatan, Kabupaten Minahasa, 95681, Indonesia

Corresponding author's e-mail: * nickytumalun@unima.ac.id

Abstract. Let $n - 2 < \lambda < n$, f be a function in Morrey spaces $L^{1,\lambda}(\Omega)$, and the equation

$$\begin{cases} Lu = f, \\ u \in W_0^{1,2}(\Omega), \end{cases}$$

be a Dirichlet problem, where Ω is a bounded open subset of $\mathbb{R}^n$, $n \geq 3$, and L is a divergent elliptic operator. In this paper, we prove the existence and uniqueness of this Dirichlet problem by directly using the Lax-Milgram Lemma and the weighted estimation in Morrey spaces.

Keywords: Morrey spaces, Dirichlet problem, elliptic equations.

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NUMERICAL SOLUTION OF VOLTERRA INTEGRO-DIFFERENTIAL EQUATIONS BY AKBARI-GANJI'S METHOD

O. A. Uwaheren¹, A. F. Adebisi², C. Y. Ishola³, M. T. Raji⁴, A. O. Yekeen⁵, O. J. Peter*^{6,7}

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Abstract. In this study, Akbari-Ganji's Method (AGM) was applied to solve Volterra Integro-Differential Difference Equations (VIDDE) using Legendre polynomials as basis functions. Here, a trial solution function of unknown constants that conform with the differential equations together with the initial conditions were assumed and substituted into the equations under consideration. The unknown coefficients are solved for using the new proposed approach, AGM which principally involves the application of the boundary conditions on successive derivatives and integrals of the problem to obtain a system of equations. The system of equation is solved using any appropriate computer software, Maple 18. Some examples were solved and the results compared to the exact solutions.

Keywords: Akbari-Ganji Method, Volterra Integro-differential and Volterra Integro-differential Difference equations

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