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Dr. Md. Alhaz Uddin
Professor
Research Area Applied Mathematics

Biography

Education

Doctor of Philosophy in Mathematics
Department of Mathematics, University of Rajshahi, Rajshahi-6205,Bangladesh(2007-2011)
Thesis Title: **â€œOn Some Approximate Solutions of Nonlinear Physical and Biological Problemsâ€**
Master of Science in Applied Mathematics
Department of Mathematics, University of Rajshahi, Rajshahi-6205,Bangladesh(1996-1997)
Bachelor of Science in Mathematics (Applied Mathematics)
Department of Mathematics, University of Rajshahi, Rajshahi-6205 ,Bangladesh(1993-1994-1996)
Higher Secondary School Certificate in Science
Govt. Edward College , Pabna,Bangladesh(1991-1993)
Secondary School Certificate in Science
Nadosyedpur Janakallyan Bl. High School, Tarash, Sirajganj,Bangladesh(1991)Group: Science,

Service Records

- **Professor**
  Department/Section: Mathematics
  Khulna University of Engineering & Technology *From 01-01-1970 to 01-01-1970*
- **Associate Professor**
  Department/Section: Mathematics
  Khulna University of Engineering & Technology *From 01-01-1970 to 01-01-1970*
- **Assistant Professor**
  Department/Section: Mathematics
  Khulna University of Engineering & Technology *From 01-01-1970 to 01-01-1970*
- **Lecturer**
  Department/Section: Mathematics
  Khulna University of Engineering & Technology *From 01-01-1970 to 01-01-1970*

Research Interest

Applied Mathematics
Nonlinear Differential Equations and Operation Research (Transpotation Problems)

Publication

Books

Journals

31. Uddin,M. A. and Ullah,M. A. N. a. M. W. (2023) , " Nonlinear Damped Oscillator with Varying Coefficients and Periodic External Forces," ***Nonlinear Dynamics and Systems Theory***, InforMath Publishing Group, vol23, no.2, pp.227-236

30. Ullah,M. W. and Uddin,M. S. R. a. M. A. (2022) , " Free Vibration Analysis of Nonlinear Axially Loaded Beams Using Modified Harmonic Balance Method," ***Partial Differential Equations in Applied Mathematics*** , Elsevier, vol6, no.December

29. Ullah,M. W. and Rahman,M. A. U. a. M. S. (2021) , " An analytical technique for handling forced Van der Pol vibration equation," ***J. Bangladesh Academic of Sciences***, BAS, Bangladesh, vol45, no.2, pp.231-240.

28. Ullah,M. W. and Rahman,M. A. U. a. M. S. (2021) , " A Modified Harmonic Balance Method for Solving Strongly Generalized Nonlinear Damped Forced Vibration Systems," ***Nonlinear Dynamics and Systems Theory***, InforMath Publishing Group, vol21 , no.5, pp.544-552

27. Ullah,M. W. and Uddin,M. S. R. a. M. A. (2021) , " A modified harmonic balance method for solving forced vibration problems with strong nonlinearity," ***Journal of Low Frequency Noise, Vibration and Active Control*** , SAGE, vol40, no.2, pp.1096â€“ 11

26. (2021) , " Analytical Technique for Damped Nonlinear Oscillators Having Generalized Rational Power Restoring Force," ***Far East Journal of Mathematical Sciences***, Pushpa Publishing House, vol130, no.1, pp.25-41

25. Islam,M. A. U. a. M. S. and ,(2020) , " An Analytical Technique for Solving Strongly Nonlinear Damped Systems with Fractional Power Restoring Force, ," ***Bulletin of the Calcutta Mathematical Society***, vol112, no.2, pp.139-152

23. (2018) , " An analytical technique for solving second order strongly generalized nonlinear Duffing equation with varying coefficients in presence of small damping," ***Bulletin of the Calcutta Mathematical Society***, Calcutta Mathematical Society, vol Vol.110, no.No.5, pp. 355-368

21. Dey,C. R. ,Islam,M. S. and Uddin,D. R. G. a. M. A. (2016) , " Approximate solutions of second order strongly and high order nonlinear Duffing equation with slowly varying coefficients in presence of small damping ," ***Progress in Nonlinear Dynamics and Chaos***, vol4, no.1, pp.7-15

20. Ghosh,D. R. and Ullah,M. A. U. a. M. W. (2016) , " An Approximate Technique for Solving Second Order Strongly Nonlinear Differential Systems with High Order Nonlinearity in Presence of Small Damping ," ***Journal of Mathematics and Informatics***, vol5, pp.1-9

19. Ullah,M. and Kawser,M. U. a. R. (2016) , " A Modified Vogelâ€™s Approximation Method for Obtaining a Good Primal Solution of Transportation Problems ," ***Annals of Pure and Applied Mathematics*** , vol11, no.1, pp.63-71

18. Uddin,M. A. and Bipasha,M. W. U. a. R. S. (2015) , " An approximate analytical technique for solving second order strongly nonlinear generalized Duffing equation with small damping," ***J. Bangladesh Academy of Sciences***, vol39, no.1, pp.103-114

17. Ullah,M. W. and Uddin,R. K. a. M. A. (2015) , " A Direct Analytical Method for Finding an Optimal Solution for Transportation Problems," ***J. Mechanics of Continua and Mathematical Sciences***, vol9, no.2, pp.1425-1434

14. Uddin,M. A. ,Ali,M. E. and Bipasha,M. W. U. a. R. S. (2014.) , " Analytical approximate solution of fourth order weakly nonlinear differential systems based on unified KBM method with strong damping and slowly varying coefficients including some limitations," ***Indian J. Theoretical Physics***, vol62, no.1&2

13. (2013.) , " An algorithmic approach to calculate the minimum time of shipment of a transportation problem," ***European Journal of Industrial and System Engineering***, vol10, pp.73-76

12. (2013.) , " A coupling approximate analytical technique for solving certain type of fourth order strongly generalized nonlinear damped oscillatory differential system," ***Indian J. Theoretical Physics***, vol61, no.3, pp.174-194

11. Uddin,M. A. and Ullah,M. A. A. a. M. W. (2012.) , " An Analytical Approximate Technique for Solving a Certain Type of Fourth Order Strongly Nonlinear Oscillatory Differential System With Small Damping," ***Far East Journal of Mathematical Sciences***, vol67, no.1, pp.59-72

10. (2012.) , " Approximate Solution of Fourth Order Near Critically Damped Nonlinear Systems with Special Conditions," ***J. Bangladesh Academy of Sciences*** , vol36, no.2, pp.187-197

9. (2011.) , " An Approximate Technique for Solving Strongly Nonlinear Biological Systems with Small Damping Effects," ***J. of the Calcutta Mathematical Society***, vol7, no.1, pp. 51-62

8. (2011.) , " Heâ€™s homotopy perturbation method to Duffing equation with damping and high order (fifth and seven) strongly nonlinearities," ***Indian J. Theoretical Physics***, vol59, no.3, pp. 295-304

7. Uddin,M. A. and Alam,M. A. S. a. M. S. (2011.) , " An Approximate Technique for Solving Strongly Nonlinear Differential Systems with Damping Effects," ***Indian Journal of Mathematics***, vol53, no.1, pp.83-98

6. (2011.) , " An Approximate Technique to Duffing` Equation with Small Damping and Slowly Varying Coefficients," ***J. Mechanics of Continua and Mathematical Sciences***, vol5 , no.2, pp.627-642

5. Uddin,M. A. ,Talukder,M. A. M. and Mumtahinah,M. H. a. M. (2011.) , " A unified KBM method for obtaining the second approximate solution of a third order weakly non-linear differential system with strong damping and slowly varying coefficients," ***J. Bangladesh Academy of Sciences***, vol35, no.1, pp.77-89

4. (2010 .) , " Second Approximate Solution of Duffing Equation with Strong Nonlinearity by Homotopy Perturbation Method," ***Ganit: J. Bangladesh Mathematical Society***, vol30 , pp.59-75.

3. (2010.) , " Second Approximation of Third-Order Nonlinear Systems with Slowly Varying Coefficients," ***Bulletin of the Calcutta Mathematical Society***, vol 102, no.5, pp.471-482

2. (2010.) , " Approximate Solution of a Fourth Order Weakly Non-Linear Differential System with Strong Damping and Slowly Varying Coefficients by Unified KBM Method," ***J. Bangladesh Academy of Sciences*** , vol34, no.1, pp.71-82

1. Azad,M. A. K. ,Samsuzzoha,M. and Alhaz,M. A. A. a. M. (2006.) , " KBM Asymptotic Method for Over-Damped Processes in Biological and Biochemical Systems," ***Ganit: J. Bangladesh Mathematical Society***, vol26 , pp.1-10.

Conference

1. Ullah,M. W. and Rahman,M. A. U. a. M. S. (01-03 July 2022) , "Analytical Solution of Modified Forced Van der Pol Vibration Equation Using Modified Harmonic Balance Method," ***Special Issue: International Conference on STEM and the Fourth Industrial Revolution (ICSTEM4IR), Khulna University, Khulna, Bangladesh*** , Khulna University studies , 2022, pp.892-903