

Dr. T.VALANARASU

Assistant Professor & Head
Department of Mathematics
Government Arts and Science College
(Formerly Bharathidasan University College)
Perambalur- 621 107
Taminadu, India



Education

M.Sc., 1998, Bharathiar University
M.Phil., 2000, Bharathiar University
Ph.D., 2007, Bharathidasan University

Professional Experience

- 2003-2005, Guest Lecturer, Bharathidasan University, Tiruchirappalli, Tamilnadu, India
- 08/2006 - 11/2007, Lecturer, VIT University, Vellore - 632 014, Tamilnadu, India
- 12/2007-05/2008, Postdoctoral Fellow, Bharathidasan University, Tiruchirappalli, Tamilnadu, India
- 06/2008 -till date, Assistant Professor & Head, Government Arts and Science College (Formerly Bharathidasan University College), Perambalur, Tamilnadu, India

Membership in Educational Bodies

- Member of Board of Studies in Mathematics, *Srimad Andavan Arts and Science College*.
- Member of Board of Studies in Mathematics, *Bharathidasan University*, (2016-2019).
- Member, Academic Council of Government Arts and Science College, Perambalur-621 107.

Courses Teaching and Taught

Differential Equations, Numerical Analysis, Topology, Fluid Dynamics, Computer Programming, Real Analysis, Integral equations and Calculus of Variations, Differential and

Integral Calculus, Complex Analysis, Operations Research, Vector Calculus and Fourier Series, Abstract Algebra, Graph Theory, Statics, Dynamics

Programmes Handled

M.Sc.(Mathematics), B.Sc.(Mathematics)

M.S.(Software Engg), B.E.(ECE, Comp. Sci, Civil, EEE)

Research Interests

- Differential Equations & Numerical Analysis

Current Area of Research Work

Numerical Methods for Singular Perturbation Problems for Differential Equations

Seminars and Conferences

- Attended, Presented several National and International Seminars, Symposia and Conferences

Invited Speakers

- [1] Delivered a lecture on “Singularly Perturbed Differential Equation: An Introduction” at St. Thomas College, Chennai, on 21st January 2009.
- [2] Delivered a lecture on “Complex Analysis” at Sri Saradha College for Women, Perambalur, on 10th February 2012.
- [3] Delivered a lecture on “Mathematics and Its Applications” at Govt. Arts College, Ariyalur, on 12th April 2012.
- [4] Delivered a lecture on “ Basics of Mathematics ” at Dhanlakshmi Srinivasan College for Women,Perambalur, on 11th July 2013.
- [5] Delivered a lecture on “Singularly Perturbed Ordinary Differential Equations” at Cauvery College for Women, Tiruchirappalli, on 14th August 2013.
- [6] Delivered a lecture on “ Mathematics and Its Applications” at Bharathidasan University Constituent Model College for Women, Veppur-621 717, on 12th March 2015.
- [7] Delivered a lecture on “MATLAB and Its Applications” in a State Level Workshop on Matlab and Its Applications at Ayya Nadar Janaki Ammal College, Sivakasi, on 19th February 2016.
- [8] Delivered a lecture on “Singularly Perturbed Differential Equations” at Thanthai Hans Roever College, Perambalur, on 21st July 2017.
- [9] Delivered six lectures on “Differential Calculus and Vector Calculus” in the 3rd Outreach Programme at National College, Tiruchirappalli, during May 14th -19th, 2018.

Research Guidance

Ph.D., 01 (ongoing)

Publications

Published: 14

Communicated: 02

Papers Published

- [1] T. VALANARASU and N. RAMANUJAM, Asymptotic Initial Value Methods for Two-Parameter Singularly Perturbed Boundary Value Problems for Second Order Ordinary Differential Equations, *Applied Mathematics and Computation*, 137(2003), 549-570.
- [2] T. VALANARASU and N. RAMANUJAM, Asymptotic Initial- Value Method for Singularly-Perturbed Boundary -Value Problems for Second - Order Ordinary Differential Equations, *Journal of Optimization Theory and Applications*, 116(1), (2003), 167 - 182.
- [3] T. VALANARASU and N. RAMANUJAM, An Asymptotic Initial Value Method for Boundary Value Problems for a System of Singularly Perturbed Second Order Ordinary Differential Equations, *Applied Mathematics and Computation*, 147, (2004), 227 - 240.
- [4] T. VALANARASU and N. RAMANUJAM, Asymptotic Initial Value Method for a System of Singularly Perturbed Second Order Ordinary Differential Equations of Convection Diffusion Type, *International Journal of Computer Mathematics*, 81(11),(2004), 1381 - 1393.
- [5] T. VALANARASU and N. RAMANUJAM, An Asymptotic Initial Value Method for Second Order Singular Perturbation Problems of Reaction- Diffusion Type with a Discontinuous Source Term. *Journal of Optimization Theory and Applications*, 133(3), (2007), 371 - 383.
- [6] T. VALANARASU and N. RAMANUJAM, An Asymptotic Initial Value Method for Second Order Singular Perturbation Problems of Convection-Diffusion Type with a Discontinuous Source Term. *Journal of Applied Mathematics & Computing*, 23(1-2), (2007), 141-152.
- [7] T. VALANARASU and N. RAMANUJAM, An Asymptotic Numerical Method for Singularly Perturbed Third Order Ordinary Differential Equations With Weak Interior Layer, *International Journal of Computer Mathematics*, 84,(2007), 333-346.
- [8] T. VALANARASU and N. RAMANUJAM, An Asymptotic Numerical Method for Singularly Perturbed Third Order Ordinary Differential Equations with a Discontinuous Source Term, *Novai Sad Journal of Mathematics*, 37(2), (2007), 41-57.

- [9] A. TAMILSELVAN, N. RAMANUJAM, R. MYTHILI PRIYADHARSHINI and T. VALANARASU, Parameter-Uniform Numerical Method for a System of Coupled Singularly Perturbed Convection-Diffusion Equations with Mixed Type Boundary Conditions. *J. appl. Math. & Informatics*, 28(1-2), (2010), 109-130.
- [10] R. MYTHILI PRIYADHARSHINI, N. RAMANUJAM and T. VALANARASU, Hybrid Difference Schemes for Singularly Perturbed Problem of Mixed Type with Discontinuous Source Term. *J. appl. Math. & Informatics*, 28(5), (2010), 1035-1054.
- [11] T. VALANARASU, R. MYTHILI PRIYADHARSHINI, N. RAMANUJAM and A. TAMILSELVAN, Parameter-Uniform Numerical Method for a System of Convection-Diffusion Equations with Discontinuous Convection Coefficients and Source Terms. *Applications and Applied Mathematics: An International Journal*, 8(1), (2013), 191-213.
- [12] A. RAMESH BABU and T. VALANARASU, A weakly coupled system of singularly perturbed convection-diffusion equations with discontinuous source term, *J. appl. Math. & Informatics*, 37 (5-6), (2019), 357-382.
- [13] A. PUVANESHWARI, A. RAMESH BABU and T. VALANARASU, Cubic Spline Scheme Approximation Method for Singularly Perturbed Periodical Boundary Value Problem, *Novi Sad Journal of Mathematics*, 50 (1), (2020), 157-172.
- [14] A. PUVANESHWARI, T. VALANARASU, and A. RAMESH BABU, A System of Singularly Perturbed Periodic Boundary Value Problem: Hybrid Difference Scheme, *International Journal of Applied and Computational Mathematics*, 6 (86), 2020, published online May 28, 2020.
- [15] A. PUVANESHWARI and T. VALANARASU, Cubic Spline Approximation Method for Singularly Perturbed Ordinary Differential Equations with Periodic Boundary Conditions (Communicated)
- [16] A. PUVANESHWARI and T. VALANARASU, Collocation Methods for Singularly Perturbed Periodical Boundary Value Problem (Communicated)

Contact Information

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