

Dr. A. Tamilselvan

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Education

- M.Sc., Department of Mathematics, Alagappa University, Karaikudi
- M.Phil., Department of Mathematics, Alagappa University, Karaikudi
- Ph.D., Department of Mathematics, Bharathidasan University, Tiruchirappalli.

Professional Experience

- Professor and Head, 2016 onwards, Bharathidasan University
- Professor, 2013 onwards, Bharathidasan University
- Associate Professor, 2010 onwards, Bharathidasan University
- Assistant Professor, (1999-2010), Bharathidasan University
- Lecturer and Head (1994-1999), JJ College of Arts and Science, Pudukkottai, Tamilnadu

Research Interests

Differential Equations & Numerical Analysis, Finite Element Analysis, Finite Difference Methods, Finite Volume Methods.

Research Guidance

- **Ph. D.** 3 (Completed), 4 (Ongoing)
- **M.Phil.** 30 (Completed), 2 (Ongoing)

Published

- 1) **A. Tamilselvan**, N. Ramanujam and V. Shanthi, A numerical method for singularly perturbed weakly coupled system of two second order ordinary differential equations with discontinuous source term, Journal of Computational and Applied Mathematics, Volume 202, Issue 2, 2007, pp 203-216.
- 2) R. Mythili Priyadharshini, N. Ramanujam and **A. Tamilselvan**, Hybrid difference schemes for a system of singularly perturbed convection-diffusion equations, Journal of Applied Mathematics & Informatics, Vol.27(2009), No.5 -6, pp.1001-1015.
- 3) **A. Tamilselvan** and N. Ramanujam, A numerical method for singularly perturbed system of second order ordinary differential equations of convection- diffusion type with a discontinuous source term, Journal of Applied Mathematics & Informatics, Vol.27(2009), No.5-6, pp.1279-1292.
- 4) **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, Journal of Applied mathematics & Informatics, Vol.28(2010), No.1-2, pp.109-130.

- 5) **A. Tamilselvan** and N. Ramanujam, A parameter uniform numerical method for a system of singularly perturbed convection -diffusion equations with discontinuous convection coefficients, *International Journal of Computer Mathematics*, Vol.87(2010), No.6, pp.1374 – 1388.
- 6) **A. Tamilselvan** and N. Ramanujam, An almost second order method for a system of singularly perturbed convection -diffusion equations with non-smooth convection coefficients and source terms, *International Journal of Computational Methods*, Volume 7, Issue 2(2010) pp.261-277.
- 7) T. Valanarasu, R. Mythili Priyadharshini, N. Ramanujam and **A. Tamilselvan**, An epsilon - Uniform Numerical Method for a System of Convection - Diffusion Equations with Discontinuous Convection Coefficients and Source Terms, *An International Journal of Applications and Applied Mathematics*, Vol. 8, Issue 1 (June 2013), pp. 191 –213.
- 8) J. Christy Roja and **A. Tamilselvan**, Shooting method for singularly perturbed fourth order ordinary differential equations of reaction-diffusion type, *International Journal of Computational Methods*, Volume 10, Issue 06, December 2013.
- 9) J. Christy Roja and **A. Tamilselvan**, Numerical method for singularly perturbed third order ordinary differential equations of convection diffusion type, *Numerical Mathematics: Theory methods application*, Volume 7 / Issue 03 , pp 265-287, August 2014.
- 10) J. Christy Roja and **A. Tamilselvan**, Numerical method for singularly perturbed third order equations of reaction diffusion type. *Numerical Mathematics: Theory, Methods and Applications* Volume 7, Issue 3 August 2014 , pp. 265-287
- 11) B. Sumithra and **A. Tamilselvan**, Numerical solution of stiff system by Trapezoidal method, *International journal of mathematical sciences and engineering applications*, Vol. 9, No. 1, 1-12, 2015.
- 12) B. Sumithra and **A. Tamilselvan**, Numerical solution of stiff system by Backward Euler method, *Applied Mathematical Sciences*, Vol. 9, No. 67, 3303 – 3311, 2015.
- 13) N. Geetha, **A. Tamilselvan**, V. Subburayan, Parameter uniform numerical method for third order singularly perturbed turning point problems exhibiting boundary layers, *Int. J. Appl. Comput. Math.*, DOI 10.1007/s40819-015-0064-4.(2015).
- 14) B. Sumithra, **A. Tamilselvan**, Trapezoidal method for solving first order stiff systems on piecewise uniform mesh, *international journal of mathematical engineering science*, volume 4, issue 2, pp. 1-10, (April 2015).
- 15) B. Sumithra, **A. Tamilselvan**, Power series method for solving first order stiff systems on piecewise uniform mesh, *international journal of application or innovation in engineering and management*, volume 4, issue 9, pp. 11-18, (September 2015).
- 16) B. Sumithra, **A. Tamilselvan**, Numerical solution of stiff system by second order backward difference formula, *global journal of pure and applied mathematics*, volume 11, number 5, pp. 3035-3046, (October 2015).
- 17) N. Geetha, **A. Tamilselvan**, Parameter uniform numerical method for solving second order singularly perturbed turning point problems with Robin boundary conditions. *Procedia Engineering*, Volume 127,2015, pp. 670-677
- 18) N. Geetha, **A. Tamilselvan**, Numerical method for system of second order singularly perturbed turning point problems with Robin boundary conditions, *Procedia Engineering*, 127 (2015) 670 – 677.
- 19) N. Geetha, **A. Tamilselvan**, Variable mesh spline approximation method for solving second order singularly perturbed turning point problems with Robin boundary conditions, *International Journal of Applied and Computational Mathematics*, DOI 10.1007/s40819-015-0064-4. (2016).

- 20) N. Geetha, **A. Tamilselvan**, Parameter uniform numerical method for fourth order singularly perturbed turning point problems exhibiting boundary layers, Ain Shams Eng. J(2016),
- 21) J. Christy Roja and **A. Tamilselvan**, Numerical method for singularly perturbed fourth order equations. Journal of Mathematical Modeling Vol. 4, No. 1, 2016, pp. 79-102
- 22) N. Geetha, **A. Tamilselvan** and J. Christy Roja, Numerical method for system of second order singularly perturbed turning point problems exhibiting boundary layers. Journal of Mathematical Modeling, Vol. 6, No. 2, 2016, pp. 211-232.
- 23) B. Sumithra, **A. Tamilselvan**, Numerical solution of the stiff system by fourth order backward difference formula International journal of computer and mathematical sciences volume 6 no 7 , (2017), pp. 325-333
- 24) J. Christy Roja and **A. Tamilselvan**, An overlapping schwarz method for singularly perturbed third order convection-diffusion type, J. Appl. Math. & Informatics Vol. 36(2018), No. 1 - 2, pp. 135 - 154

Accepted for publication

- 1) J. Christy Roja, **A. Tamilselvan**, Schwarz method for singularly perturbed second order convection-diffusion equations
- 2) N. Geetha and **A. Tamilselvan**, Robust numerical method for singularly perturbed turning point problems with Robin type boundary conditions

Communicated

- 1) J. Christy Roja, **A. Tamilselvan**, A parameter uniform second order Schwarz method for a weakly coupled system of singularly perturbed convection diffusion equations.
- 2) J. Christy Roja, **A. Tamilselvan**, A parameter uniform fourth order Schwarz method for a weakly coupled system of singularly perturbed convection diffusion equations.
- 3) B. Sumithra and **A. Tamilselvan**, Numerical solution of stiff system by third order adams moulton method
- 4) B. Sumithra, **A. Tamilselvan**, Implicit midpoint method with piecewise Uniform Mesh for Stiff Systems.
- 5) V. Raja, **A. Tamilselvan**, Numerical method for singularly perturbed convection diffusion equations with integral boundary condition
- 6) V. Raja, **A. Tamilselvan**, Difference scheme on a non-uniform mesh for singularly perturbed reaction diffusion equations with integral boundary condition
- 7) V. Raja, **A. Tamilselvan**, Numerical method for a system of singularly perturbed convection diffusion equations with integral boundary conditions
- 8) E. Sekar, **A. Tamilselvan**, V.Raja, Singularly perturbed delay differential equations with integral boundary condition
- 9) E. Sekar, **A. Tamilselvan**, Singularly perturbed delay differential equations with integral boundary condition of convection-diffusion type
- 10) E. Sekar, **A. Tamilselvan**, Fitted finite difference method for singularly perturbed differential equations with delay and advanced large argument
- 11) E. Sekar, **A. Tamilselvan**, A parameter uniform numerical method for singularly perturbed differential equations with mixed argument