

# CURRICULUM VITAE

## **Dr. Narsimhulu D**

Assistant Professor,  
Department of Statistics and Applied Mathematics,  
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## **Research Interests**

**Domains:** Applications of Differential Equations, Shock Waves, Fluid Dynamics, Gas Dynamics, Magnetohydrodynamics.

**Preamble:** My research interest is in applied mathematics and nonlinear partial differential equations (PDEs) in problems with applications to computational fluid dynamics (CFD). Also, it is interdisciplinary in nature, combining mathematical analysis, numerical analysis and scientific computing. The abruptness of change in the features of the medium, characterize shock waves and the study of unsteady flow of compressible fluid behind the strong shock propagation associated with the phenomena like explosion, implosion etc., is of importance in many fields of science and engineering. These flows are governed by nonlinear partial differential equations of hyperbolic type with moving boundary conditions and have no analytical solutions. Determining semi analytical or numerical solutions for these type of flows is of great interest and forms the underlying idea of my research.

## **Educational Qualifications**

- **Ph.D.** from BITS Pilani, Hyderabad, Telangana, India (2011-2018)  
**Thesis Title:** Self Similar Solutions to Compressible Flow Problems
- **M.Sc.** from Pondicherry Central University, Puducherry, India (2007-2009)
- **B.Sc.** from Andhra University, Visakhapatnam, Andhra Pradesh, India (2004-2007)

## Academic Experience

- Joined **CUTN** as an Assistant Professor in the Department of Statistics and Applied Mathematics, Thiruvarur, Tamil Nadu, India (**Dec 2019 -** )
- Worked as Adhoc Faculty at School of Sciences (Mathematics), National Institute of Technology Andhra Pradesh, Tadepalligudem, India (**Jul 2019 - Dec 2019**)
- Worked as Assistant Professor at School of Technology, Department of Mathematics, GITAM University Hyderabad Campus, Telangana, India (**Jul 2018 - Apr 2019**)
- Worked as Teaching Assistant in the Department of Mathematics, BITS Pilani Hyderabad Campus, Telangana, India (**Jan 2018 - May 2018**)
- Worked as Lecturer at Vandana Junior and Degree College, Secunderabad, Telangana, India (**Jun 2010 - Jan 2011**)

## **Subjects Taught:**

- Differential Equations
- Numerical Analysis
- Algebra and Linear Algebra
- Real and Complex Analysis
- Business Mathematics
- **MATHEMATICS-I** and **MATHEMATICS-III**

**Projects Guided:** Guided LOP and SOP (Lab Oriented and Study Oriented Projects) for **B.E** and **M.Sc. (Hons.)** students during the **Ph.D.** programme.

## Computer Skills

- Microsoft Windows
- LaTeX
- MATLAB and Mathematica

## Membership of Professional Bodies

- Life Member of Indian Mathematical Society (**IMS**), Membership No.: **D13134**.
- Member of International Association of Engineers (**IAENG**) Society of Scientific Computing, Membership No.: **223403**.

## Awards/Scholarships/Honors

- **INSPIRE Award:** Innovation in Science Pursuit for Inspired Research. This fellowship is given by Department of Science and Technology, New Delhi, India for pursuing science carrier with outstanding scholastic record. INSPIRE Regst. No.: **IF110071 (10<sup>th</sup> Jan 2011)**

- **REGIS Gold Medal** in Postgraduate Level, Pondicherry University, Puducherry, India (2<sup>nd</sup> Apr 2010)
- **Best Award** in SSC Level, Lions Club of Palasa - Kasibugga District: 324 - CI (INDIA) (15<sup>th</sup> Aug 2002)

### Achievements

- Secured 6<sup>th</sup> rank, Pondicherry Central University M.Sc. Mathematics Entrance Exam 2007.
- Secured 6<sup>th</sup> rank, Andhra University MA-Education (Mathematics) Entrance Exam 2007.
- Secured 25<sup>th</sup> rank, Acharya Nagarjuna University M.Sc Mathematics Entrance Exam 2007.
- Secured 113<sup>th</sup> rank, Andhra University M.Sc. Mathematics Entrance Exam 2007.
- University **Gold Medalist** for the year of **2009** in Mathematics (**PG Level**).

### Publications Accepted/Appeared in Referred Journals

- **Narsimhulu Dunna**, Addepalli Ramu and Dipak Kumar Satpathi, “Self-Similar Motion of Strong Converging Cylindrical and Spherical Shock Waves in Non-ideal Stellar Medium”, Journal of Applied Fluid Mechanics, DOI: [10.18869/acadpub.jafm.73.249.28566](https://doi.org/10.18869/acadpub.jafm.73.249.28566), ISSN No.: 1735-3572, E-ISSN No.: 17353645, **Regional Information Center for Science and Technology, Iran**, Vol. 11(6), 1717-1726, (Jun 2018).
- **Narsimhulu Dunna**, Addepalli Ramu and Dipak Kumar Satpathi, “Similarity Solution of Spherical Shock Waves: Effect of Viscosity”, Proyecciones Journal of Mathematics, DOI: [10.4067/S0716-09172016000100002](https://doi.org/10.4067/S0716-09172016000100002), ISSN No.: 0716-0917, E-ISSN No.: 7176279, **Departamento de Matematicas, Universidad Catolica Del Norte., Chile**, Vol. 35(1), 11-31, (Mar 2016).
- Addepalli Ramu, **Narsimhulu Dunna** and Dipak Kumar Satpathi, “Numerical Study of Shock Waves in Non-ideal Magnetogasdynamics (MHD)”, Journal of the Egyptian Mathematical Society, DOI: [10.1016/j.joems.2014.10.002](https://doi.org/10.1016/j.joems.2014.10.002), ISSN No.: 2090-9128, **Elsevier, Egypt**, Vol. 24(1), 116-124, (Feb 2015).
- **Narsimhulu Dunna**, Addepalli Ramu, Dipak Kumar Satpathi and G Sudha, “Phase-Plane Analysis Application to Guderley’s Problem”, Journal of Emerging Trends in Engineering and Applied Sciences, <http://jeteas.scholarlinkresearch.com/articles/Phase%20Plane%20new.pdf>, ISSN No.: 2141-7016, **Scholarlink Resource Centre Limited, United Kingdom**, Vol. 4(3), 406-411, (Jan 2013).

### Publications in Conference Proceedings

- Revathi Ravilisetty, Addepalli Ramu, **Narsimhulu Dunna**, “Solution of One dimensional Strong Converging Cylindrical and Spherical Shock Waves in Non Ideal Gas”, Proceedings of the 64<sup>th</sup> Congress of the **Indian Society of Theoretical and Applied Mechanics** (An International Conference), Section Code: FM 6, Organized by School of

Mechanical Sciences and School of Basic Sciences (Mathematics), Indian Institute of Technology Bhubaneswar, India, December 9-12, (2019).

- **Narsimhulu Dunna**, Addepalli Ramu and Dipak Kumar Satpathi, “Numerical Solution to Strong Cylindrical Shock Wave in the Presence of Magnetic Field”, Lecture Notes in Engineering and Computer Science: Proceedings of the World Congress on Engineering, International Conference on Applied and Engineering Mathematics (**ICAEM 2018**), [www.iaeng.org/publications/WCE2018/WCE2018\\_pp33-38.pdf](http://www.iaeng.org/publications/WCE2018/WCE2018_pp33-38.pdf), Imperial College of London, London, United Kingdom, ISSN No.: 2078-0966, **Newswood Limited**, Vol. **I**, 33-38, July 4-6, (2018).
- **Narsimhulu Dunna**, Addepalli Ramu and Dipak Kumar Satpathi, “Similarity Solutions to Shock Waves in Non-ideal Magnetogasdynamics”, AIP Conference Proceedings: 11<sup>th</sup> International Conference of Numerical Analysis and Applied Mathematics (**ICNAAM 2013**), With cooperation of European Society of Computational Methods in Sciences, Engineering and Technology (ESCMCET), Rodos Palace Hotel, Rhodes, Greece, **DOI: 10.1063/1.4825632**, ISSN No.: 0094243X, E-ISSN No.: 15517616, **American Institute of Physics**, Vol. **1558**(1), 860-864, September 21-27, (2013).

### **Papers Presented in Conferences/Seminars/Symposium**

- Revathi Ravilisetty, Addepalli Ramu, **Narsimhulu Dunna**, “Solution of One Dimensional Strong Converging Cylindrical and Spherical Shock Waves in Non Ideal Gas”, presented in 64<sup>th</sup> Congress of the **Indian Society of Theoretical and Applied Mechanics** (An International Conference), Section Code: FM 6, held at School of Mechanical Sciences and School of Basic Sciences (Mathematics), Indian Institute of Technology Bhubaneswar, India, December 9-12, **2019**.
- **Narsimhulu Dunna** and Addepalli Ramu, “An Explicit Forward Scheme to One-Dimensional Strong Converging Cylindrical and Spherical Shock Waves in Non-ideal Gas”, presented in International Conference on Applicable Mathematics (**ICAM 2016**), held at Department of Mathematics, Stella Maris College, Chennai, India, during November 30 - Dec 1, **2016**.
- **Narsimhulu Dunna** and Addepalli Ramu, “Self-Similar Motion of Strong Converging Cylindrical and Spherical Shock Waves in Non-ideal Medium”, presented in International Conference on Current Trends in PDEs: Theory and Computations (**ICCT-PDEs: TC 2015**), held at Department of Mathematics, South Asian University, New Delhi, India, during December 28-30, **2015**.
- **Narsimhulu Dunna** and Addepalli Ramu, “Similarity Solutions of Shock Waves in Non-ideal Magnetogasdynamics: Part-a”, presented in International Conference on Mathematical Sciences (**ICMS 2012**), held at Department of Mathematics, S. S. E. S. Amravati’s Science College, Nagpur, India, during December 28-31, **2012**.

## **Conferences/Seminars/Workshops Participation**

- Attended and participated in ‘Short Term Training Program on Advanced Computational Methods in Engineering and Science’, organized by the Department of Mathematics, National Institute of Technology (NIT), Warangal, during April 1-3, **2015**.
- Attended and participated in ‘Introductory Research Methodology Workshop’, conducted by the Department of Humanities and Languages, Birla Institute of Technology and Science (BITS) Pilani Hyderabad Campus, 14<sup>th</sup> September, **2013**.
- Attended and participated in ‘DAAD Network International Workshop on Modeling, Computing and Optimization’, organized by the Department of Mathematics, Indian Institute of Technology (IIT), Madras, during September 3-12, **2012**.
- Attended and participated in ‘Recent Trends in Partial Differential Equations and Applications’, organized by the Department of Mathematics and Statistics, University of Hyderabad, during March 18-19, **2012**.
- Attended and participated in ‘LECTURE -WORKSHOP IN MATHEMATICS’ (Initiatives in M.Sc. Integrated Program), organized by the Ramanujan School of Mathematics and Computer Science, Pondicherry Central University, during April 3-5, **2008**.
- Attended and participated in ‘Mathematics Training and Talent Search Programme’ (MTTS) funded by NBHM, R. I. E. Mysore, May 19-June 14, **2008**.

## **Personal Information**

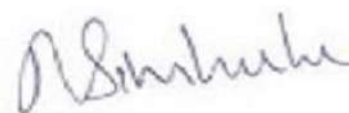
**Name:** Narsimhulu Dunna  
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**Language Proficiency:** English, Hindi, Telugu.  
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Reyya Padu Post, Vajrapukotturu Mandal, Srikakulam District,  
Visakhapatnam City, Andhra Pradesh State, Pin Code - 532218.

## **Declaration**

I hereby declare that the above statements made by me are true to the best of my knowledge and belief.

**Date:** 26-12-2019

**Place:** Thiruvvarur



(Narsimhulu Dunna)