Brief Resume

Name : T. N. Venkatesh

Academic record

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B.Tech   I.I.T.  Madras        1991  Aerospace Engg.
M.E      I.I.Sc. Bangalore     1993  Aerospace Engg.
PhD      I.I.Sc. Bangalore     2003  Aerospace Engg.

Thesis title: A vortex merger theory for tropical cyclogenesis.
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Professional record

Working at NAL since 1993.

Present post:

Chief Scientist,
Computational & Theoretical Fluid Dynamics Division,
National Aerospace Laboratories,
Council of Scientific and Industrial Research,
PB 1779, Bangalore 560017.

Fields of specialization

Computational Fluid Dynamics, Vortex methods, Parallel Computing, Atmospheric flows, Numerical Weather Prediction, Spectral methods, Visualization, Aviation Weather

Awards

- Sabita Chaudhuri Memorial Award for the best ME student in the department of Aerospace Engineering, IISc. for the year 92-93.
- NAL Team award for Outstanding performance in Design, Development and Project Execution for "*Development of 32 processor Flosolver Mk5*"
  August 2000
- NAL Outstanding performance for Excellence in the area of Technology "*Computational methodology and CFD software development for estimation of power-on effects of Saras Mk2 aircraft*"
  August 2022

Sabbaticals: Visiting Scientist : November 2010 - November 2011 Department of Aerospace Engineering and Divecha Center for Climate Change, Indian Institute of Science, Bangalore

Number of Journal publications : 19
Copyrights : 1
Patents : 1

Membership of societies : Member of the Aeronautical Society of India.

List of journal publications

1. Monsoon forecasting on parallel computers,
   U. N. Sinha, Sarasamma, V. R., Rajalakshmy, S., Subramanium, K. R., Bhardwaj, P. V. R., Chandrashekhar, C. S., Venkatesh, T. N., Sunder, R., Basu, B. K., Gadgil, S. and Raju, A., *Current Science*, Vol. 67, No. 3, 178–184, 1994.

2. Scalability of the parallel GCM-T80 code
   T. N. Venkatesh, Rajalakshmy Sivaramakrishnana, Sarasamma V. R. and U. N. Sinha
   Current Science, Vol. 75, No. 7, 1998.

3. Computational weather modelling
   U. N. Sinha, Ravi Nanjundiah and T. N. Venkatesh
   Current Science, Vol. 77, No. 10, 1999.

4. A Scalable parallel architecture for spectral GCMs
   T. N. Venkatesh, U. N. Sinha and Ravi Nanjundiah
   in "Developments in Terracomputing", *World Scientific*: 2001
   Proceedings of the Ninth ECMWF Workshop on the Use of High Performance Computing in Meteorology held at Reading, England during November 2000.

5. Prediction of tropical cyclone genesis using a vortex merger index
   T. N. Venkatesh and Joseph Mathew
   Geophysical Research Letters, Vol. 31, L04105, 19 February 2004.

6. Super-linear speed-up of a parallel multigrid Navier-Stokes solver on Flosolver
   T. N. Venkatesh, V. R. Sarasamma, Rajalakshmy S., Kirti Chandra Sahu and Rama Govindarajan
   Current Science, Vol. 88, No. 4, 25 February 2005, 589 – 593.

7. Mesoscale interactions during the genesis and intensification of the 1999 Orissa supercyclone
   T. N. Venkatesh
   Mausam, **57**, 1, 31–36, 2006.

8. Preliminary results on the simulation of the 1999 Orissa supercyclone using a GCM with a new boundary layer code
   T. N. Venkatesh, Vidyadhar Mudkavi, S. Rajalakshmy, V. R. Sarasamma, U. N. Sinha and R. Narasimha
   Mausam, **57**, 1, 119–128, 2006.

9. Isentropic Swirling Flow Through Supersonic Nozzles; Part I (Free Vortex Flow)
   S. Vaidyanathan, T. N. Venkatesh and Krishna Mohan
   Journal of Aerospace Sciences and Technologies, February 2006.

10. Role of precision in meteorological computing: a study using the NMITLI Varsha GCM – T. N. Venkatesh and U. N. Sinha, in "Use of high performance computing in meteorology" Edited by George Mozdzynski, *World Scientific* 2007

11. A numerical study of the role of vertical structure of vorticity during tropical cyclone genesis
    T. N. Venkatesh and Joseph Mathew
    Fluid Dynamics Research, **42** (2010) 045506 (21pp)

12. "Relative effect of slope and equilibrium line altitude on the retreat of Himalayan glaciers"
    T. N. Venkatesh, A. V. Kulkarni and J. Srinivasan
    The Cryosphere, 6, 301 – 311, 15 March 2012

13. "The problem of clear air turbulence: changing perspectives in the understanding of the phenomenon "
    T. N. Venkatesh and Joseph Mathew
    Sadhana Vol. 38, Part 4, August 2013, pp. 707–722.

14. "Secondary instability as a possible mechanism for clear-air turbulence: a case study"
    T. N. Venkatesh, Joseph Mathew and Ravi S. Nanjundiah
    Meteorology and Atmospheric Physics: Volume 126, Issue 3 (2014), Page 139-160

15. "CFD analysis for siting wind-turbines on high-rise buildings"
    Veena K., Asha V., Arshad Shameem C. and T. N. Venkatesh
    Journal of Physics, Conference series, 822,012013, 2017

16. "Study of a possible wake-vortex encounter of an aircraft over the Arabian Sea"
    T. N. Venkatesh, Arshad Shameem C. and Saravanakumar J.
    Journal of Physics, Conference series, 822,012049, 2017

17. "Numerical simulation of flow over an airport during a low-level wind shear event"
    Arshad Shameem C., J. Saravanakumar and T. N. Venkatesh
    Journal of Aerospace Sciences and Technologies, Volume 71, pp 24 – 29, 2019

18. "Estimation of turbulent heat transfer rates for flow over buildings using OpenFOAM"
    K. Veena, K.M. Parammasivam and T. N. Venkatesh
    Journal of Aerospace Sciences and Technologies, Volume 71, No.2, pp 208 – 213, 2019

19. "Urban Heat Island studies: Current status in India and a comparison with International studies"
    K. Veena K., K. M. Parammasivam and T. N. Venkatesh
    J. Earth Syst. Sci 129 85, 2020

Copyrights

Registration number	:	SW-3745/2008
Title	:	VARSHA-2C - A software for numerical weather prediction
Language	:	C
Author	:	T. N. Venkatesh, NAL, Bangalore, 560017
Date	:	14-01-2008

Patents

Indian Patent		
Patent number	:	208824
Title of invention	:	A device for scalable inter-nodal communication in a parallel computing system
Authors	:	U. N. Sinha, V. R. Sarasamma, Rajalakshmy S. and T. N. Venkatesh, NAL, Bangalore, 560017
Date	:	10-08-2007