Atal Bihari Harichandan

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Overview:

• PhD in Aerospace Engineering at IIT Kharagpur

• <u>Published in Reputed International Journals (IJHFF; IJFS; IJCFD; Computers and</u> Fluids; Aerospace Science and Technology; Fluids and Structures, Journal of Wind Engineering and Industrial Aerodynamics).

• Presented lectures in International Conferences.

• Teaching and Research experience of more than 5 years.

• Like to sincerely dedicate to the <u>development and growth of Indian R&D and the</u> <u>field of engineering, in general</u>.

• Interests in **R&D** related to development and implementation of flow solvers in Computational Aerodynamics.

• Like to work in a team (involved in organizing conferences; **represented IIT-cricket team**).

• Innovative and self-motivated team player with energy and leadership experience.

• Contribute to Indian R&D.

Education:

Ph.D.	Aerospace Engineering Specialization: Com	IIT Kharagpur, Kharagpur putational Aerodynamics	
M.Tech	Mechanical EngineeringIIT Guwahati, Guwahati8.88CPISpecialization:Fluid and Thermal Science		
B.E	Mechanical Engineering	Sambalpur University	72%
10+2 10	Council of Higher Secondary Education, Orissa Board of Secondary Education, Orissa		77% 76%

Research Interests:

- Grid generation
- Computational and experimental aerodynamics
- Heat and mass transfer
- Gas turbine and jet propulsion

List of Publications:

- [1] Harichandan A.B. and Roy A. (2010), Numerical investigation of low Reynolds number flow past two and three circular cylinders using unstructured grid CFR scheme. *International Journal of Heat and Fluid Flow*, Vol. 31, pp. 154-171.
- [2] Haldar A., Ghosh. S., Harichandan A.B. and Roy A., Numerical Investigation of Incompressible Low and Moderate Reynolds Number Flow past some Reflexed Eppler Airfoils. *Aerospace Science and Technology*, (under review).
- [3] Harichandan A.B. and Roy A., Numerical prediction of incompressible unsteady flow past array of two dimensional circular cylinders placed in staggered arrangements, *Computers and Fluids*, (under review).
- [4] Harichandan A.B. and Roy A., CFR: A finite volume approach for computing incompressible viscous flow, *International Journal of Computational Fluid Dynamics*, (under review).
- [5] Harichandan A.B. and Roy A. (2010), Numerical investigation of flow past two circular cylinders in tandem in the vicinity of a fixed wall. *International Journal of Fluids and Structures*, (under review).
- [6] Harichandan A.B. and Roy A. (2010), Computation of incompressible flow past array of circular cylinders using an unstructured grid finite volume approach, Proceedings of the 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, January 4-6.
- [7] Harichandan A.B. and Roy A. (2010), A numerical study of vortex shedding from two circular cylinders in tandem with ground effect. Proceedings of the 37th National and 4th International Conference on Fluid Mechanics and Fluid Power, December 16-18, IIT Madras, (accepted).

Summary of Research Experience (MTech & PhD)

- Development of incompressible finite volume laminar Navier-Stokes solvers based on 2-D structured grid comprising of quadrilateral cells (CFR).
- Development of incompressible finite volume laminar Navier-Stokes solvers based on 2-D unstructured grid comprising of triangular cells (CFRUNS).
- Numerical investigation of low Reynolds number flow past single circular cylinder using both CFR and CFRUNS scheme.
- Numerical investigation of low Reynolds number flow past two and three circular cylinders using CFRUNS scheme.
- Numerical investigation of low Reynolds number flow past two and three circular cylinders of unequal diameters in staggered arrangement using CFRUNS scheme.
- Numerical investigation of flow past two circular cylinders in tandem in the vicinity of a fixed wall.
- Numerical Investigation of Incompressible Low and Moderate Reynolds Number Flow past some NACA Series Airfoils and Reflexed Eppler Airfoils.
- Incompressible flow calculations around a square cylinder using SOLA method.
- Study of aerodynamic characteristics of NACA0012 airfoil using PANEL method.
- Loss modeling of axial flow turbines using MATLAB.

Senior Lecturer	KIIT University, Bhubaneswar	2006
Lecturer	IACR Engineering College, Rayagada	2005-2006
Lecturer	JIET, Cuttack	2000-2003

Teaching Experience

Teaching assistantship at IIT Kharagpur

Since January-2007 to January-2010, teaching assistantship has been done sincerely in various topics like Engineering Mechanics, Engineering Drawings, Introduction to Aerodynamics and Experiments on Aerodynamics.

Extra Curricular Activities

Actively participated in the organization of International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2007), IIT Kharagpur, India.

Actively participated in the organization of **Research Scholars' Day (2010)** in the Department of Aerospace Engineering, IIT Kharagpur, India.

Awards & Prizes

- Awarded additional fellowship during PhD course from a project supported by the Air Force Office of Scientific Research, AFRL, USAF, and Aeronautics R&D Board, Ministry of Defence, Government of India research grant, through SRIC, IIT Kharagpur, India.

- Awarded the Ministry of Human Resource Development (MHRD) Govt. of India fellowship during PhD course.

- Awarded the Ministry of Human Resource Development (MHRD) Govt. of India fellowship during MTech course.

- Selected by AICTE for faculty position through EFIP programme in 2003.
- Awarded national scholarship in 1992.

Course Work Completed during PhD

- Introduction to Aerodynamics
- Computational Aerodynamics

Course Work Completed during MTech

- Computational Fluid Dynamics and Heat Transfer
- Advanced Fluid Mechanics
- Gas Turbine Theory
- Two Phase Flow and Heat Transfer
- Convective Heat and Mass Transfer
- Jet Propulsion
- Advanced Thermodynamics
- Advanced Engineering Mathematics
- Experimental Methods
- Viscous Fluid Flow

Computer Skills

- Operating Systems: Linux, Windows 95/98/XP
- Programming: MATLAB, C/C++
- Fluid Flow Analysis Tool: FLUENT, GAMBIT

Personal Details

Sex: Male Father's Name: Upendra Nath Harichandan Nationality: Indian Marital Status: Single Date of Birth: 24th May 1977 **Present Address:** JCB Hall of Residence, A-204, IIT Kharagpur, India **Permanent Address:** At-Dattapur; Post-Sunakhala; Dist- Khurda, Orissa, India, 752034. Phone (Home): 09938147310

References

Prof. Arnab Roy

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