CURRICULUM VITAE

1. Name : Dr. Subhas C. Yaragal

2. Date of birth : 20th June 1965

3. Present official address
(From 1st November 2003 onwards)

: Centre of Excellence [COE] Researcher
Wind Engineering Research Center
Tokyo Polytechnic University
1583, Iiyama, Atsugi-city
Kanagawa, 243-0297, **JAPAN**
E-mail: yaragal@arch.t-kougei.ac.jp
subhashyaragal@yahoo.com

Permanent official address

Senior Lecturer
Department of Civil Engineering
National Institute of Technology Karnataka
Surathkal, PO: Srinivasnagar – 575 025.
Mangalore, **INDIA**
E-mail: yaragal@nitk.ac.in
subhashyaragal@yahoo.com

4. Field of Specialization : Wind Engineering, Wind Tunnel Testing, Experimental Fluid Mechanics

5. Positions held in (Chronological order)

: Lecturer, Dept. of Civil Engineering
Ghousia College of Engineering
Ramanagaram, Dist: Bangalore, INDIA
[**From 4th September 1989 to 1st July 1991**]

Research Scholar of Indian Institute of Science, Bangalore, INDIA
[**From 1st August to 14th November 1996**]

Working as Senior Lecturer at
National Institute of Technology Karnataka
Surathkal, PO: Srinivasnagar – 575 025
Mangalore, INDIA
[**From 15th November 1996 to Date**]

6. Academic Qualifications (Bachelor's degree onwards)

Exam passed	University	Year	CGPA/ %age of Marks
B.E.	Mangalore	June 1987	73.6
M.E.	Indian Institute of Science, Bangalore	Jan. 1989	6.3/8.0
Ph. D	Indian Institute of Science, Bangalore	Jan. 1998	

7. References

1. Prof. M. S. Mohan Kumar
Department of Civil Engineering
Indian Institute of Science
Bangalore – 560 012.
Karnataka, INDIA

Tel: 91-080-3942323
Fax: 91-080-3600404
E-mail: msmk@civil.iisc.ernet.in

2. Prof. H. V. Venkatakrishna
Department of Civil Engineering
National Institute of Technology Karnataka
Surathkal, PO: Srinivasnagar – 575 025
Mangalore, INDIA

Tel: 91-0824-2475984 Ext. 270
Fax: 91-0824-2476090
E-mail: hodcivil@nitk.ac.in

3. Prof. Katta Venkataramana
Associate Dean (PG & Research)
Department of Civil Engineering
National Institute of Technology Karnataka
Surathkal, PO: Srinivasnagar – 575 025
Mangalore, INDIA

Tel: 91-0824-2475984 Ext. 470
Fax: 91-0824-2476090
E-mail: ven@nitk.ac.in

Formerly'

Associate Professor
Department of Ocean Civil Engineering
Kago Shima University
Japan

8. Significant Contributions

Doctoral Work:
Title: ***Unsteady Two Dimensional Flow Field Behind Perforated Plates on a Flat Surface***

The flow over bluff bodies with separation is one of the oldest in fluid mechanics. Such flows are particularly of interest in engineering due to their frequent presence in real life applications.

Studies of two-dimensional separation bubble and associated unsteady pressure fields were conducted for normal/splitter combination at zero incidence in a uniform low turbulence region. The normal plate perforation level was varied from 0% to 50% to give different levels of fluid interaction into the otherwise stable bubble that exists for a solid normal plate. The Reynolds number based on step height was varied from 4×10^3 to 1.2×10^4. Extensive measurements of mean pressure, surface pressure fluctuations, pressure fluctuations within the flow and longitudinal turbulence intensity were made for all the models. The effect of blockage and free-stream turbulence of the fluctuating pressures on the surface and within the flow are also studied.

Mean pressures were found to be strongly dependent on perforation level of the normal plate. The size and shape of the bubble vary with different perforated normal plate that is to say the bubble gets reduced both in height and length up to 30% perforation level. For higher perforation of the normal plate the bubble is completely swept out. The study showed that blockage and free-stream turbulence have considerable effect on the fluctuating pressures in the flow field and on the surface.

The peak turbulence velocity value in the mixing region increases as the reattachment zone is approached and further downstream it decreases. The peak turbulence value occurs around the reattachment length. The turbulence intensity values are highest for the case of solid normal plate (bleed air is absent) and are lowest for the case of 50% perforation of the normal plate (bleed air is maximum in the present study). From the data analysis, similarity profiles are established for all the perforated normal plates between non-dimensional distance from the splitter.

The maximum value of the shear layer pressure fluctuation is reached upstream of reattachment at an axial location of x equal to about 0.76 X_R . This is in contrast to the observed location of maximum surface fluctuation levels which occur at $X/X_R = 0.9$. It is interesting to note that for 50% perforation of the normal plate, the RMS pressure fluctuation in the flow field gets reduced to around 61.5% as compared to solid normal plate. Analysis of the results show that the ratio $[C_{p'max} / \{-C_{pb} (1-n)\}]$ where $C_{p'max}$ is the maximum fluctuating pressure coefficient, C_{pb} is the base pressure coefficient and n is the perforation level in percentage for surface RMS pressure fluctuation levels seem to be a constant and has a value of about 0.22. Similar analysis show that the ratio $[C_{p'max} / \{-C_{pb} (1-n)\}]$ for the flow field RMS pressure fluctuation levels seem to be constant and has a value of 0.32.

9) Details of Publications

Referred Journals

1. Subhash C. Yaragal, "Unsteady 2-D flow field characteristics for perforated plates with a splitter", International Journal of Wind and Structures, Vol. 7, No. 5, 2004, pp. 317-332.

2. Subhash C. Yaragal and S. Shrihari, "Performance evaluation of sewage treatment plant – A case study" International Journal of Pollution Research, 23(2): 311-315 (2004).

3. Subhash C. Yaragal, H.S. Govinda Ram and K. Keshava Murthy, "Two - dimensional flow field behind perforated plates on a flat surface", Journal of Wind Engineering and Industrial Aerodynamics, Vol.90, 2002, pp. 75 – 90 **.** ***This paper was adjudged for receipt of award as the best paper published during two consecutive years (2001 and 2002) by the Indian Society for Wind Engineering.***

4. Subhash C. Yaragal and H.S.Govinda Ram and K. Keshava Murthy, "An experimental investigation of flow field downstream of solid and porous fences". Journal of Wind Engineering and Industrial Aerodynamics, Vol. 66, 1997, pp. 127-140.

5. Subhash C. Yaragal, and H.S. Govinda Ram., " Wake pressure flow field characteristics associated with two dimensional triangular prisms"., Communicated to the Journal of Hydraulic Engineering, The Indian Society for Hydraulics, [Revised manuscript submitted].

6. Subhash C. Yaragal and Yukio Tamura, "Experimental investigation on the effects of free-stream turbulence and blockage on 2-D unsteady pressure fields", being communicated to the International Journal of Wind and Structures.

7. Subhash C. Yaragal, and H.S. Govinda Ram., "Investigation of 2-D wake pressures downstream of perforated plates"., Communicated to the Journal of Indian Society for Wind Engineering.

8. Subhash C. Yaragal, Yukio Tamura and Masahiro Matsui, "Cyclones prediction and their management in India", Paper being communicated.

9. Subhash C. Yaragal and H.S. Govinda Ram, "Microphone based pitot static pressure probe measurements in two dimensional fluid flows", Communicated to the Indian Journal of Engineering and Material Science.

10. Subhas C. Yaragal, and H.S. Govinda Ram, and Yukio Tamura, "Experimental investigation of the 2-D flow field associated with bleed flows"., Communicated to the Journal of Institution of Engineers (India).

11. Subhash C. Yaragal, "Perforated plates with a splitter – fluctuating pressure measurements", Communicated to the Indian Journal of Engineering and Material Science.

12. Subhash C. Yaragal, Yukio Tamura and Masahiro Matsui, "Status of cyclones monitoring scenario in India", Paper communicated to the NITK, Research bulletin.

13. Subhash C. Yaragal, Yukio Tamura and H. S. Govinda Ram, "Correlation studies on two dimensional unsteady pressure fields behind perforated plates with a splitter", Communicated to the International Journal of Japanese Society of Mechanical Engineers.

14. Subhash C. Yaragal, "Characteristics of 2-D flow field associated with bleed flows", Paper communicated to the NITK, Research bulletin.

15. Subhash C. Yaragal and M. K. Nagaraj, "Estimation of specific yield in a regional groundwater system", NITK, Research bulletin, 12(1) June 2003, pp. 9-12.

16. Subhash C. Yaragal, H.S. Govinda Ram and K. Keshava Murthy., "An experimental investigation of mean flow field behind perforated plates on a flat surface", Journal of Hydraulic Engineering, The Indian Society for Hydraulics Vol. 8(2), Sept. 2002, PP. 34-43.

17. Subhash C. Yaragal, "Mean flow field characteristics behind perforated plates", KREC, Research bulletin, 10(2) December 2001, pp. 4-12.

18. Vaijayanti Gulve, Subhash C. Yaragal and S. Shrihari, "Performance of sewage treatment plant at New Mangalore Port Trust Township, Panambur", NITK, Research bulletin, Vol.8, No.2, pp.4-8, 1999.

19. H.S. Govinda Ram and Subhash C. Yaragal, " Backward facing step-flow, flow separation and reattachment – state of the art", Journal of Institution of Engineers (India), Vol. 75, February 1995, pp. 237-242.

Articles in News Letters

20. Subhash C. Yaragal, "Fluctuating flow field pressure measurements behind 2-D perforated plates", Wind Effects Bulletin, Wind Engineering Research Center, Tokyo Polytechnic University, Japan, Vol. 2 July 2004.

International/National Conferences

21. Subhash C. Yaragal, Yukio Tamura and Masahiro Matsui, "Wind damage and cyclones management scenario in India", Paper submitted to The Fourth European and African Conference on Wind Engineering (EACWE 4) to be held at Prague, 11- 15 July, 2005.

22. Subhash C. Yaragal, Yukio Tamura and Masahiro Matsui, "Satellites – For Meteorological Applications in the Indian Context", Paper submitted to the Tenth America's Conference on Wind Engineering, May-June 2005.

23. Subhash C. Yaragal and Yukio Tamura, "Experimental investigation on the effect of free stream turbulence and blockage on 2-D unsteady pressure fields", Proceedings of the Third International Conference on Advances in Structural Engineering and Mechanics (ASEM'04), 2-4 September 2004, Seoul, Korea, pp. 321-329.

24. Subhash C. Yaragal and Yukio Tamura, "Correlation studies on 2-D unsteady pressure fields behind perforated plates/splitter combination", Proceedings of the Third International Conference on Advances in Structural Engineering and Mechanics (ASEM'04), 2-4 September 2004, Seoul, Korea, pp. 340-347.

25. Subhash C. Yaragal and Yukio Tamura, "Unsteady flow field fluctuating measurements of perforated plates using condenser microphone based static pressure probe", Proceedings of the One-day Conference on "Extreme Winds and Developments in Modeling of Wind Storms" and Proceedings of the 6th UK Conference on Wind Engineering, Cranfield University, 15th – 17th September 2004.

26. Subhash C. Yaragal and Yukio Tamura, "Condensor microphone based unsteady wake pressure measurements associated with 2-D thin perforated plates normal to an air-stream", Annual conference of the Japanese Association for Wind Engineering, Sanjo Conference Hall, Tokyo University, Tokyo, 31st May – 1st June 2004, pp. 149-150.

27. M. K. Nagaraj and Subhash C. Yaragal, "Effect of noise in parameter estimation of rainfall recharge model", Proceedings of the International Conference on Advanced Modeling Techniques for Sustainable Management of Water Resources (AMTSMW) , National Institute of Technology Warangal, 28-30th Jaunary 2004.

28. S. Shrihari, Pruthviraj, Nagaraj M.K and Subhash C. Yaragal., "Ground water contamination and prevention in lateritic soils", Proceedings of the International Conference on Advanced Modeling Techniques for Sustainable Management of Water Resources (AMTSMW) , National Institute of Technology Warangal, 28-30th Jaunary 2004.

29. Subhash Yaragal C. and Govinda Ram H. S., "Unsteady pressure fluctuations in 2-D turbulent wake flow ", Proceedings of the 11th International Conference on Wind Engineering, Lubbock, Texas, United States of America, 2-5 June 2003, pp. 1953-1957.

30. Subhash C. Yaragal and H.S. Govinda Ram "Free-stream turbulence and blockage effects on unsteady pressure fields" Proceedings of the Second International Conference on Fluid Mechanics and Fluid Power, INCFMFP – 2002, I.I.T. Roorkee Dec. 2002.

31. M.K. Nagaraj, Subhas C. Yaragal and G. Rajashekar, "Runoff estimation using GIS techniques", Proceedings of the International Conference on Hydrology and Watershed Management, Dec. 2002, Hyderabad, India.

32. Subhash C. Yaragal and H.S. Govinda Ram, "Effect of free-stream turbulence on unsteady pressure downstream of a solid fence", Proceedings of the Third International Colloquium on Bluff Body Aerodynamics and Applications, Blacksburg, Virginia, USA, July 28 – August 1, 1996.

33. H.S. Govinda Ram, Subhash C. Yaragal and K. Keshava Murthy, 'Experimental studies on the flow field associated with porous fences", Proceedings of the International Conference on Advances in Mechanical Engineering, Indian Institute of Science, Bangalore, December 20-22, 1995, Vol. II. pp. 1501-1509.

34. Subhash C. Yaragal, "Perforated plates – associated unsteady wake pressures" Second National Conference on Wind Engineering , Visvesvaraya National Institute of Technology, Nagpur, February 12th to 14th ,2004.

35. M.K Nagaraj and Subhash C. Yaragal, "Effect of noise in parameter estimation of a rainfall recharge model", HYDRO, National Conference on Hydraulics and Water Resources, December 26-27th 2003, at CWPRS, Pune.

36. Subhash C. Yaragal and S. Shrihari, "Performance evaluation of sewage pumping station, New Mangalore Port Trust, Mangalore – A case study", HYDRO – 2002, Conference on Hydraulics, Water Resources and Ocean Engineering, Dec 16-17th, 2002, IIT Bombay.

37. M. K. Nagaraj and Subhash C. Yaragal, "Optimization model of a non homogeneous aquifer for ground water management", HYDRO – 2002, Conference on Hydraulics, Water Resources and Ocean Engineering, Dec 16-17th, 2002, IIT Bombay.

38. Subhash C. Yaragal and H. S. Govinda Ram, "Unsteady 2D flow field behind perforated plates", National Conference on Wind Engineering (NCWE) – 2002, April 04-06, 2002, Indian Society for wind engineering, Indian Institute of Technology, Roorkee., pp. 303 – 310.

39. S. Shrihari, Subhash C. Yaragal, and M. K. Nagaraj , "Groundwater quality modeling – a case study", paper presented in the national conference on hydraulics and water resources, HYDRO – 2001, December, 6-7th 2001, at CWPRS, Pune.

40. Subhash C. Yaragal, M.K. Nagaraj and Vijayakumar, S. V, "A hybrid model for groundwater management policy options", paper presented in the national conference on hydraulics and water resources, HYDRO – 2001, December, 6-7th 2001, at CWPRS, Pune.

41. S. Shrihari, M. K. Nagaraj and Subhash C. Yaragal, "Effect of lateritic soil on wastewater disposal by land treatment systems", IAEM National conference on recent advances in waste management, Banaras Hindu University, Institute of technology, Varanasi, February 23-25, 2001, pp. 341-343. [**Awarded Certificate of Appreciation**]

42. S.Shrihari, Subhash C. Yaragal and K.S.Babu Nayaran "Role of housing techniques in sustainable development", World congress on sustainable development, Engineering and Technological challenges of twenty first century, Calcutta, January 2000.

43. Subhash C. Yaragal and S. Shrihari, "Focus on basic amenities for sustainable rural development", All India Conference on technologies for rural development in Y2K, S.V. University College of Enginering, Tirupati, 30.6.2000 and 1.7.2000, pp. 157.158.

44. B.R.Samaga, Subhas C. Yaragal and Varghese Geogre, "Coastal housing", Workshop on "Maritime development of Karnataka coast", Karnataka Regional Engineering College, Surathkal, Jan 1999.

45. Subhash C. Yaragal and Jaywant H. Arakeri, "Vortex ring interaction with circular cylinder, Proceedings of the National symposium on experiments in fluids, Indian Institute of Technology, Kanpur, December 1992, pp.43-52.

46. H.S. Govinda Ram and Subhash C. Yaragal, "Shear layer separation and reattachment : state of the art", Seminar on Hydromechanics and water resources Engineering, Indian Institute of Science, Bangalore, December 1991, p2(1-3).

47. Subhash C. Yaragal and Ramaprasad, "Monthly and annual rainfall distribution for Karnataka", National workshop on water resources and project management, Indian Institute of Technology, Madras, June 1990.

48. Ramaprasad and Subhash C. Yaragal, "Rainfall frequency distribution for Karnataka", Hydromechanics and Water Resources, Indian Institute of Science, Bangalore, May 1990, pp. 124-129.

10) Prizes and Awards

Nature / Name of Prize and Awards	Awarded by	Awarded for	Year of Award
1. Best NCC Cadet	Officer Commandant	Excellence in Several tests conducted to evaluate overall performance	1986
2. NCC "C" Certificate Senior Division Army wing	Director, National Cadet Corps, Ministry of Defense Govt. of India	Passing the Certificate Examination	1986
3. Bharat Vikas Award	Integrated council for Socio-economic Progress, Delhi	Excellence in the field of education, science & Technology	2001
4. Vikas Ratan Gold Award	International Integr-ation & growth Society, Delhi	Excellence in academic/ Research area	2002
5. Best paper Award	Indian Society for Wind Engineering	Best paper published during consecutive two years (2001 and 2002)	2004

11) Continuing Education Programs / Conferences Organized

1. Coordinator for AICTE / ISTE short term training program on "Engineering Geology and Geo-technology role in country planning and development", National Institute of Technology Karnataka, Surathkal, Dec. 1998 and Jan. 1999.

2. Coordinator for AICTE / ISTE short term training program on "Advances and latest trends in Engineering Geology and Geo-Technology", National Institute of Technology Karnataka, Surathkal, Dec. 31st to 11th January 2003.

12) Ongoing Research Project

Principal Coordinator for a research project titled " Studies on characteristics of turbulence and dispersion of pollutants – mitigative measures, using wind tunnel facility", in the thrust area, funded by Ministry of Human Resources Development, GOI, **Amount sanctioned – 15 Lakhs**.

Completed a major consultancy project for M/s. Mysore Paper Mills, Bhadravati titled "Survey for alternative routing options and hydraulic design of pipeline, pumping station for diversion of treated effluent from MPM mill site to MPM forest area (7.5 Km length)". **Cost of consultancy – 3 Lakhs.**

13) Details of Research / Consultancy Projects Carried out [Few representative works presented below]

1. Technical report on the appearance of cracks in certain walls of the state home (Juvenile home) building at Udupi.

2. Report on the quality of construction of the apartment building "Sheethal Towers" Ujjody, NH. 17, Kankanady, Mangalore.

3. Report on repairing and retrofitting of the overhead water tank at Munnuru village, Mangalore Taluk.

4. Report on load testing of minor bridge No. 1268 at KM 877/13-14 between Nethravathi and Ullal stations.

5. Quality certification of Avneet Apartments, Mangalore.

6. Report on the leakage in certain portions of Unity Health Complex Building, Kankanady, Mangalore.

7. Report on the structural stability of apartment building at Kottara Chowki, Mangalore.

8. Design of several concrete mixes from time to time.

9. Recommendations for meeting projected demand of water for Pilikula Nisargadama Project.

10. Report on alignment of pipeline at IOCL, site at Mangalore.

11. Feasibility report on providing and laying 200 mm diameter additional pipeline from existing pump house to sewage treatment plant, NMPT, Mangalore.

12. Waste water treatment plant design for sterling sea foods, Sasihithlu, Mangalore.

13. Survey work at Karwar for Seabird Project.

14. Hydrological studies for locating the ground water table and recommendations for avoiding the ground water interfering with the working area, Kudremukh Iron & Steel Company.

15. Pumping tests on several open wells in and around Mangalore.

14) Any other Relevant Information on Academic Standing

(a) Topped the class for Master of Engineering [M.E]. programme at Indian Institute of Science, Bangalore.

(b) Stood fifth in the class of sixty for Bachelor of Engineering [B.E] Program at Karnataka Regional Engineering College., Surathkal.

(c) State Technical Agency member appointed for scrutiny of project proposals related to Pradhana Manthri Grama Sadak Yojana.

15) Life Membership of Professional Bodies

(i) Institution of Engineers (India)
(ii) Indian Society for Wind Engineering
(iii) Indian Society for Hydraulics
(iv) Indian Society for Technical Education

16) Institute Academic / Administrative Assignments

(i) Worked as maintenance warden of the National Institute of Technology [NITK] hostels for two years (June 2000 to May 2002).

(ii) Member of various committees constituted by principal / Head of the Department [H.O.D] during visits of expert committee members from National Accreditation Committee [NBA], All Indian Council for Technical Education [AICTE], Ministry of Human Resources Development [MHRD] etc to the Institute from time to time.

(iii) Editor of NITK news bulletin.

(iv) Has been staff counselor for IGNOU (Indira Gandhi National Open University) students enrolled for advanced postgraduate diploma in construction management and advanced postgraduate diploma in water resources engineering.

(v) Actively involved in undergraduate student counseling.

17) Activities Associated with, in the Department

(i) Teaching –Lecture classes, drawing, laboratory and survey practice classes.
(ii) Participate in departmental testing and consultancy assignments.
(iii) Active participation in ongoing research work in allied fields of interest.
(iv) Worked as Vice-Chairman and Treasurer of Civil Engineering Association for a period of two and half years.
(v) Has worked for two years as time table in charge and coordinated with Head of the Department in work load distribution and planning of classes.
(vi) To assist the Head of the Department in preparation of annual report and reports as and when asked by All Indian Council for Technical Education [AICTE], Ministry of Human Resources Development [MHRD], National Accreditation Committee [NBA] etc.

18) International Conferences/Workshops Attended

1. Attended the First International Symposium on Wind Effects on Buildings and Urban Environment (ISWE 1), March 8th and 9th 2004, Main Hall at Science Council of Japan, Tokyo, Japan.

2. Annual conference of the Japanese Association for Wind Engineering, Sanjo Conference Hall, Tokyo University, Tokyo, 31st May – 1st June 2004.[**Presented a paper**]

3. The Third International Conference on Advances in Structural Engineering and Mechanics, Sheraton Walker Hill Hotel, Seoul, Korea, 2 – 4 September 2004. .[**Presented a paper**]

4. The Second International Conference on Steel and Composite Structures, Sheraton Walker Hill Hotel, Seoul, Korea, 2 – 4 September 2004. .[**Presented a paper**]

5. Attended a workshop on "Measures to reduce damages due to cyclones", on 14th and 15th October 2004, organized by Kyoto University, Kyoto, Japan.

6. Attended a COE Workshop "Numerical Simulation of the Turbulent Boundary Layer", October 22nd 2004, Tokyo, Japan.