CURRICULUM VITAE

Manhar R. Dhanak, PhD

Professor and Director,
Institute for Ocean and Systems Engineering - SeaTech
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1. EDUCATION

Academic Degrees:

Ph.D. Major: Applied Mathematics, University of London, 1980
Title of Dissertation: *The motion of Vortex Layers and Vortex Filaments*

Diploma of Imperial College Major: Applied Mathematics, Imperial College, London, 1980

B.Sc. with 1st Class Honors Major: Mathematics Imperial College, London, 1976

Professional Development Activities:

SERC Post-doctoral Research Fellow, 1979 - 1982, Imperial College, London
Field of Research: Hydrodynamic Stability of Shear Flows.

Post-graduate courses completed:

1976 - 1982	Vortex Motion, Hydrodynamic Stability, Continuum Mechanics, Boundary Layers, Linear and Non-Linear Waves, Rotating Fluid Flows, Differential Equations, Wiener-Hopf Method
1990	Advanced course in Aero and Hydro-acoustics, University of Cambridge, UK

2. PROFESIONAL EXPERIENCE

2003 -	Director, Institute for Oceans and Systems Engineering, Florida Atlantic University
2003 - 2009	Chair, Department of Ocean Engineering, Florida Atlantic University
2001 - 2003	Asst. Chair, Department of Ocean Engineering, Florida Atlantic University
1990 -	Professor, Florida Atlantic University (Full Professor since 1996)
2009 - 2010	Chair, Florida Coastal Ocean Observation System
2008 - 2010	Member, Board of Directors, SECOORA
2007 -	Member Representative, Ocean Leadership
2005 - 2007	Member, Board of Governors, Consortium of Ocean Research and Education
2003 - 2005	Member, Board of Directors, Intelligent Systems Consortium

1999 - 2003 Director, Center for Hydrodynamics and Physical Oceanography, Florida Atlantic University

1989 – 1990 Senior Research Associate, Engineering Department, University of Cambridge, UK

1982 - 1989 Research Scientist, Topexpress Limited, Cambridge, UK

3. INSTRUCTIONAL EXPERIENCE

Courses taught at Florida Atlantic University:

Undergraduate Courses	Graduate Courses
Fluid Mechanics, Ocean Wave Mechanics, Ship Hydrodynamics Heat transfer	Advanced Hydrodynamics, Vortex Dynamics, Turbulent Flow Ocean energy Conversion Flow Control Physical Aspects of Oceanography Mathematical Methods for Engineers

3.1 Dissertation and Thesis Supervised to completion

- *Sound generated due to vortical flow past a forward facing step*. MS Thesis. Ocean Engineering. R Gundlapalli. Completed 1992.
- *Stability of an elliptical vortex in a time-dependent strain field*. MS Thesis. Ocean Engineering. M Marshall. Completed 1992.
- *Effect of applied periodic strain on coherent structures in a turbulent boundary layer*. MS Thesis. Ocean Engineering. B. R. Neravetla. Completed 1994.
- *Interaction of a vortex sheet with a finite vortex*. MS Thesis. Ocean Engineering. K. S. Vishwanthan. Completed 1994.
- *An experimental investigation of the performance of a series of propellers for a human powered underwater vehicle*. MS Thesis. Ocean Engineering. K Heeb. Completed 1994.
- *A model of the horseshoe vortex in juncture flows*.. MS Thesis. Ocean Engineering. E Monnier. Completed 1996.
- *Ocean Turbulence Measurement Using an Autonomous Underwater Vehicle*. . PhD, Ocean Engineering. K. Holappa. Completed 1997.
- *Oceanic turbulence measurement using an AUV platform and development of graphical interfaces for data acquisition and analysis*. MS Thesis. Ocean Engineering. Eric Leindecker. Completed 2001.
- *Subsurface structure of an atmospherically forced water column in littoral waters*. PhD Dissertation. Michael Chernys. Completed 2002.
- *Thermocline tracking using an upgraded ocean explorer autonomous underwater vehicle*. MS Thesis. Ocean Engineering. Mathieu Clabon. Completed 2003.
- *Subsurface flow generated by a steady wind stress applied at the water surface*. MS Thesis. Ocean Engineering. Lionel Gurfinkiel. Completed 2003.

- *Design and testing of an untethered vertically ascending profiler for use in measuring near-surface turbulence*. MS Thesis. Ocean Engineering. Jeffery Bogin. Completed 2003.
- *Characterizing the western boundary current front between the Florida current and the littoral waters at 26^0 N latitude*. Ariel Meir. Completed 2003.
- *Experimental investigation of skin friction drag reduction on a flat plate using microbubbles*. MS Thesis. Zachary Grabe. Completed 2007.
- *Boundary layer control on a circular cylindrical body through oscillating Lorentz forcing*. MS Thesis. Ryan Seltzer. Completed 2007.
- *Test Platform development for measuring surface effect ship response to wave loads*. MS Thesis. Nicholas Kouvaras. Completed 2010.
- *Wave breaking on a beach*. MS. Ocean Engineering. Faydra Schaffer. Completed 2010.
- *Flow past an underwater turbine*. MS. Ocean Engineering. Zaqie Reza. Completed 2010
- *Surface pressure fluctuations due to an impinging under-expanded supersonic jet*. PhD. Ocean Engineering. Binu Pundir. Completed 2011.
- *Simulation of Cobblestone effect on a SES*. MS. Ocean Engineering. Michael Kindel. Completed 2012.
- *Hydrokinetic resource assessment of the Florida Current*. PhD. Ocean Engineering. Alana Duerr. Completed 2012.

3.2 Dissertation and thesis in progress

- *Control and obstacle avoidance of a WAM-V USV*. PhD. Ocean Engineering. Armando Sinisterra.
- *Seakeeping characteristics of a WAM-V USV*. MS. Ocean Engineering. Russell Jarvis.
- *Automate launch and recovery system for AUVs from USVs*. PhD. Ocean Engineering. Eduardo Sarda.
- *Biomimetic vehicle for station keeping in an energetic shallow water environment*. PhD. Ocean Engineering. Michael Kindel.
- *Wave transformation in near*-shore environment. PhD. Ocean Engineering. Fuxian Gong.

4. SCHOLARLY ACHIEVEMENTS

Professional Interests: Coherent vortex dynamics. Ocean Turbulence. Wake and boundary layer flows. Ship hydrodynamics. AUV-based observations. Ocean Energy. Hydro-acoustics. Drag Reduction.

Awards

- FAU Research Award, 1995
- Dean's Award, FAU, 2002

Sponsored Research

Over $19 million in research awards as PI or Co-PI:

Project	Funding Agency	Period
Active Destabilization of Coherent Vortex Flows. Role: PI	NSF	92-95
Surface pressure characteristics of non-equilibrium turbulent boundary layer flows. Role: PI	ONR	94-97
Small-scale ocean turbulence measurement using an AUV. Role: PI	ONR	94-95
Turbulence measurement in the benthic boundary layer. Role: PI	ONR	96-97
Flow in a streamwise corner. Travel Grant. Role: PI (with P W Duck).	NATO	96-97
Turbulence measurement surveys in the convectively driven upper mixed layer and close-bottom boundary layer over a continental shelf during a storm front. Role: PI	ONR	97-98
Deployment of OEX and Autosub in Scottish waters for Langmuir cell and internal wave study. Role: PI	ONR	97-98
Microstructure turbulence characteristics of a shallow water column during a storm front. Role: PI	ONR	98-99
High Reynolds number flow in a streamwise corner. Travel Grant. Role: PI (with Dr P W Duck).	NATO	98-99
Subgrid scale modeling for LES simulation of flow in a turbulent bottom boundary layer. Role: PI (with D Slinn)	ONR	2000
Oceanographic measurement surveys using AUVs: (i) structure of the subsurface oceanic layer and the bottom boundary layer in littoral waters beneath adverse atmospheric conditions, and (ii) intense localized mixing in straits. Role: PI	ONR	2000
Active wake turbulence following using an AUV Role: Co-PI (with K. Holappa)	ONR	2000
Workshop on Establishing a Consortium of East Coast Ocean Observatories Role: PI (with S Dunn)	NSF	2001
Subgrid Scale Modeling for LES Simulation of Flow in a Turbulent Bottom Boundary Layer. Role: PI (Continuation)	ONR	2001-2003
Oceanographic Measurement Surveys Using a Custom AUV: Mixing Induced in The Upper Mixed Layer on a Continental Shelf During Adverse Weather Conditions. Role: PI.	ONR	2001-2005
NNRNE – Design of Mission Effective Support Ships. Role: PI.	ONR	2004-09
A Sea Base Game Changing Enabler – A Rapidly Deployable Stable Platform, Role: Co-PI (with R Driscoll)	ONR	2006-08
Center of Excellence in Ocean Energy Technology Role: Co-PI (with R Driscoll)	State of Florida	2006-08

Development of Design Tools and Algorithms for T-Craft Component Design Validation. Role: PI.	ONR	2007-09
Compact Acoustic Intercept System (CAIS) STTR - Phase I. In collaboration with ISL. Role: PI	ONR	2009-10
Energy Efficient Mission-effect ships. Role: PI	ONR	2009-13
Development of Design Tools & Algorithms for T-Craft Component Design Validation Grant Expansion Role: PI. (with Ananthakrishnan, Mahfuz, von Ellenrieder)	ONR	2010-13
Naval Engineering Education Consortium (NEEC) With University of Michigan. Role: PI. (with others)	U of Michigan	2010-15
ACCeSS Collaboration: Precision ASV-AUV Cooperative Autonomy using an Advanced-Hull ASV and Automated Launch and Recovery. Role: PI (with An, von Ellenrieder, Ananthakrishnan, Beaujean)	Stevens Inst.	2010-15
Perseus Project: Role: PI (with Edgar An +FKCC)	ONR	2012-13
A Sea Base Game Changing Enabler - A Rapidly Deployable Stable Platform Demonstrator - Part II. Role: PI	ONR	2010-13
Characterization and Exploitation of Magnetic and Electric Fields in the Coastal Ocean Environment. In Collaboration with NSWC-CD and Nova Southeastern University. Role: PI. (with von Ellenrieder, An, and Frisk); Total funding: $2 million	ONR	2010-12
Energy Efficient Mission-effect ships – Grant Expansion. Role: PI	ONR	2011-13
Experimental Evaluation of Automatically Generated Behaviors for Autonomous USV Operations: Platform Instrumentation and Testing. Role: Co-PI (with K. von Ellenrieder)	ONR	2012-13
Aquantis Ocean Energy	Dehlsen Assoc.	2012-13

Publications:

INVITED BOOK/EDITORSHIP:

- Handbook of Ocean Engineering, Editors: Manhar Dhanak and Nikolaos Xiros. Springer. In preparation.
- Ocean Engineering and Oceanography Series. Editors: Manhar Dhanak and Nikolaos Xiros. Springer 2012 – present.
- A special Cabled Ocean Observatory Edition. IEEE Journal of Oceanic Engineering. Vol. 27 (2). Editors: Edson, J.B. Chave, A.C. Dhanak, M.D. Duennebier, F.D. 2002.

REFEREED PUBLICATIONS:

- *The Motion of Vortex Layers and Vortex Filaments*. M. R. Dhanak. 1980. PhD Thesis. University of London.
- *The stability of an expanding circular vortex layer*. M. R. Dhanak. 1981 Proc. Roy. Soc. Lond. A375, 433-451.

- *Evolution of an elliptic vortex ring*. M. R. Dhanak and B. De Bernardinis, 1981. Journal of Fluid Mechanics, 109, 189-26. (Cited 60 times)
- *Interaction between a vortex filament and an approaching rigid sphere*. 1981. M. R. Dhanak. Journal of Fluid Mechanics, 110, 129-147.
- *On certain aspects of three-dimensional instability of parallel flows*. M. R. Dhanak. 1983. Proc. Roy. Soc. Lond. A385, 53-84.
- *Turbulent boundary layer on a circular cylinder: the low - wavenumber surface pressure spectrum due to a low-Mach- number flow*. M R Dhanak. 1988. Journal of Fluid Mechanics, 191, 443-464.
- *Effect of suction on flow transition on a rotating disc*. M. R. Dhanak. Proceedings of workshop on Laminar-Turbulent Transition, NASA Langley, summer 1991. Full Paper, published in Instability, Transition and Turbulence, Editors: Hussaini M Y, Kumar A and Street C L. Springer-Verlag.
- *Vortex Destabilization by a Harmonic strain field*. M. R. Dhanak and M P Marshall. Proceedings of the International Vortex Wake Symposium, FAA, Washington, October, 1991.
- *Response of a transducer array to noise induced by a turbulent boundary layer on a cylinder*. M. R. Dhanak. ASME Symposium on Flow noise Modeling, Measurement & Control, December, 1991.
- *The stability of a polygon of finite vortices*. M. R. Dhanak. 1992. Journal of Fluid Mechanics, 234, pp 297-316.
- *Flow noise due to interaction of an eddy with a forward facing step*. M. R. Dhanak and R Gundlapalli. ASME Symposium on Flow-induced Vibration and Noise, November, 1992.
- *Effects of uniform suction on the stability of flow on a rotating disc*. M. R. Dhanak. 1992. Proc. Roy. Soc. Lond. A439, 431-440.
- *Instability of stagnation point flow to streamwise free stream vorticity*. M. R. Dhanak. Proceedings of workshop on Laminar-Turbulent Transition, NASA Langley, Summer 1993.
- *Response of a sonar array to turbulent-boundary-layer noise on a cylinder*. M. R. Dhanak. 1993. Journal of Sound and Vibration, 168, 229-241.
- *Motion and stability of an array of vortices over a pulsed surface*. E Acton and M. R. Dhanak. 1993. Journal of Fluid Mechanics, 247, 231-245.
- *Motion of an elliptical vortex under applied periodic strain*. M. R. Dhanak and M P Marshall. 1993 Phys. Fluids. A5, 1224-1230.
- *Instability of flow in a streamwise corner flow*. M. R. Dhanak. 1993. Proc. Roy. Soc. Lond. A441, 201-210.
- *On the equation of motion of a uniform vortex layer*. M. R. Dhanak. 1994. Stud. Appl. Math. 92, 115-125.
- *Equation of motion of a viscous vortex sheet*. M. R. Dhanak. 1994. Journal of Fluid Mechanics. 269, 265-281.
- *Effect of weak periodic pressure gradient on streamwise vortices near a wall*. M. R. Dhanak and B R Neravetla. Proceedings of NOISE-CON 94. Fort Lauderdale, 1994.

- *Structure of the stagnation point flow in the presence of cross-stream vorticity in the external flow*. Mr Dhanak and J T Stuart. In Transition, Turbulence and Cumbustion, vol 1, Eds. M Y Hussaini, T B Gatski and T L Jackson. Kulwer Academic Publishers, 1994.
- *On the pressure fluctuations induced by coherent vortex motion near a surface*. M. R. Dhanak and A P Dowling. Invited paper. AIAA paper 95-2240. 26th AIAA Fluid Dynamics Conference. San Diego, CA. June 1995.
- *On a model for surface pressure fluctuations induced by the wall region of a turbulent boundary layer*. M. R. Dhanak, A P Dowling and C Si. ASME Publications – FED. Vol. 230, pp 87-94. 1995.
- *Distortion of stagnation-point flow due to cross-stream vorticity in the external flow*. M. R. Dhanak and J T Stuart. 1995. Phil. Trans. Roy. Soc. Lond. A 350, 1-11.
- *Conceptual model for Turbulent skin Friction*. C Si and M. R. Dhanak. ASCE 11th Engineering Mechanics Conference, Fort Lauderdale. May 1996.
- *Interaction between an injected vortex and a rolling up vortex sheet*. M. R. Dhanak and K. S. Vishwanthan. AGARD Conference Proceedings 584. Trondheim, Norway. May 1996.
- *Ocean Flow Measurement using an Autonomous Underwater Vehicle*. K Holappa, M. R. Dhanak, S Smith and E An. Proceedings of the 1996 Symposium on AUV Technology, pp. 424-429. 1996.
- *An Autonomous Turbulence Measurement Platform*. K. Holappa and M. R. Dhanak. Oceans 96. Fort Lauderdale. September 1996.
- *An Autonomous Ocean Turbulence Measurement Platform*. M. R. Dhanak and K Holappa. Proceedings of the Workshop on Microstructure Sensors in the Ocean, Mt. Hood, Oregon. October 1996.
- *The bifurcation of circular jets in cross flow*. P Huq and M. R. Dhanak. 1996. Phys. Fluids. 8, 754-763.
- *Coherent vortex model for surface pressure fluctuations induced by the wall region of a turbulent boundary layer*. M. R. Dhanak, A P Dowling and C Si. 1997. Phys. Fluids. 9, 2716-2731.
- *The effect of streamwise pressure gradient on a corner boundary layer*. M. R. Dhanak and P W Duck. 1997. Proc Roy Soc Lond. A 453, 1793-1815.
- *AUV Platform. Requirements for Ambient Turbulence Measurement.*. M. R. Dhanak and K Holappa. Proceedings of the Seventh International Offshore and Polar Engineering Conference. Honolulu, May, 1997.
- *Turbulence Measurements off the Florida Coast using an AUV*. M. R. Dhanak and K Holappa. Oceanology '98. Brighton, England. March 1998.
- *Regional Oceanography using a small AUV*. E An, M. R. Dhanak, S Smith, S E Dunn. UUV Showcase'98. Southampton, England. September 1998.
- *On the Physics of Skin Friction Reduction through Spanwise Oscillation*. Proceedings of the Symposium on Seawater Drag Reduction. NUWC, Newport, R.I., 1998.
- *An Autonomous Ocean Turbulence Measurement Platform*. M. R. Dhanak and K Holappa.. 1999. Journal of Atmospheric and Ocean Technology, 16, 1506 - 1518.

- *On turbulent skin friction reduction on a plane surface through spanwise oscillation of the surface*. M. R. Dhanak and C Si. 1999. Journal of Fluid Mechanics, 383, 175 - 195. (Cited 22 times)
- *Non-similarity solutions to the corner boundary layer equations and the effects of wall transpiration*. P W Duck, S R Stow and M. R. Dhanak. 1999. Journal of Fluid Mechanics. 400. 125-162.
- *In-situ oceanic turbulence measurements using a mobile AUV platform*. M. R. Dhanak and K Holappa. 1999. Proceedings of the Ninth ISOPE, vol 2, p431.
- *Measurement of small-scale oceanic turbulence using an AUV*. M. R. Dhanak and K. Holappa. International Symposium on Turbulence and Shear Flow Phenomena. Santa Barbara, Ca. September 1999.
- Using Small AUVs for Oceanographic Measurements. M. R. Dhanak, E. An, K. Holappa and S. Smith. Proceedings of Oceans MTS/IEEE. Vol. 3. pp 1410-1417. 1999.
- *Boundary-layer flow along a ridge: alternatives to the Falkner-Skan solutions*. P. W. Duck, S R Stow and M. R. Dhanak. 2000 Phil. Trans. Roy. Soc. Lond. 358, 3075-3090.
- *A cross-platform microstructure turbulence measurement package*. K. Holappa and M R. Dhanak. Proceedings of Oceans MTS/IEEE 2000. Vol. 3, pp 2177-2183. 2000.
- *An AUV survey in the littoral zone : small-scale subsurface variability accompanying synoptic observations of surface currents*. Dhanak, M.R., An, E, Holappa, K., 2001. IEEE J. Oceanic Eng. *Vol 26 (4)*
- *Coastal Oceanography using a small AUV*. E. An, M R Dhanak, L K Shay, S Smith and J Van Leer. 2001, Journal of Atmospheric and Ocean Technology, 18, 215-234.
- *Measurement of Concentration and Size Distribution of Bubbles in the Upper Mixed Layer Using an AUV*. Manhar Dhanak, Michael Chernys, Ken Holappa, Eric-Olivier Leindecker In The Autonomous Underseas Systems Institute's (AUSI) workshops on Sensors and Sensing Technology for Autonomous Ocean Systems, http://auvac.org/research/publications/files/2001/Dhanak_Manhar.PDF Miami, FL, 2001.
- *Turbulent Convection Driven by Surface Cooling in Shallow Water*. O. Zikanov, D. N. Slinn and M. R. Dhanak. 2002 Journal of Fluid Mechanics, 464, 81 – 111.
- *Large-eddy simulations of wind-driven Ekman layer*. Zikanov, O., Slinn, D., and Dhanak, M. 2003. *J. Fluid Mech*. 495, pp. 343-368 (Cited 18 times)
- *SFOMC, A Successful Navy And Academic Partnership Providing Sustained Ocean Observation Capabilities in the Florida Straits*, W. Venezia, W. Baxley, P. Tatro, M. Dhanak, F.R. Driscoll, P. Beaujean, S. Shock,S. Glegg, E. An, M. Luther, B. Weisberg, H. DeFerrari, N. Williams, H. Nguyen, N.Shay, J. Van Leer, R. Dodge, D. Gilliam, A. Soloviev, S. Pomponi, M. Crane, and K.Carter, 2003, Marine Technology Society Journal, Vol. 37, 81-91.
- *Design and Dispersion Analysis for Upgrade and Replacement of Beach Outfalls*. D. Hancock, Manhar Dhanak, and D V Reddy. ASCE Proceedings of The Pipeline Division Specialty Conference 2006.

- *Control Synthesis of a Nonlinearly Coupled Electromechanical System by a Reduced Complexity, Volterrra Method*. Xiros, N.I., Dhanak, M.R. ASNE Intelligent Ships Symposium VIII, May 20-21 2009, Philadelphia, PA.
- *Impact of the NNRNE Program on Ocean Engineering Education*. Manhar Dhanak, R. Yeung and S. Kinnas. ASEE Annual Conference and Exhibition. Austin, TX. 2009. http://soa.asee.org/paper/conference/paper-view.cfm?id=12381
- *A Project-oriented Team-based Learning*. Edgar An and M R Dhanak. ASEE Annual Conference and Exhibition. Austin, TX. 2009
- *Boundary Layer Control using an Oscillatory Lorentz Forcing.* Ryan Seltzer and Manhar Dhanak. MARELEC Conference 2009. Stockholm, Sweden 2009.
- *Air-Cushion Vehicle Response to Waves in the Surf Zone.* M. R. Dhanak. Oceans MTS/ IEEE Conference. Biloxi, MS. October, 2009.
- *Surface Pressure Fluctuations Due to an Impinging Supersonic Under Expanded Jet.* Binu Pundir and Manhar Dhanak. 48th AIAA Aerospace Sciences Meeting. 2010. Paper AIAA-2010-0107.
- *Test Platform Development for Measuring SES Response to Wave Loads.* N. Kouvaras, M. Dhanak, and N. Xiros. Proceedings of the 29th American Towing Tank Conference. Annapolis, MD, August 2010.
- *Hydrokinetic Power Resource Assessment Of The Florida Current*. Alana Duerr and M Dhanak. Oceans MTS/IEEE Conference. Seattle, WA. September, 2010.
- *Development of a Small Autonomous Unmanned Surface Vehicle.* Manhar Dhanak, Thomas Furfaro and Janine Mask Multi-Agency Craft Conference (MACC) 2011 Virginia Beach, VA June 2011.
- *An assessment of the hydrokinetic energy resource of the Florida Current*. Alana E. S. Duerr and Manhar R Dhanak. 2012. IEEE Journal of Oceanic Engineering. Volume 37, Issue 2, pp. 281 – 293.
- *Utilizing the HYCOM model for the assessment of Florida Current's hydrokinetic renewable energy resource.* Alana E. S. Duerr, Manhar R. Dhanak, James H. Van Zwieten. 2012. MTS Journal. Volume 46, 24 – 33.
- *Adverse Weather Experiment: AUV-based Observations of Subsurface Distribution of Dissipation Rate in a Shallow Water Column in Response to the Passage of a Cold Atmospheric Front*. M. Chernys and M R Dhanak. In preparation
- *Characteristics of the western boundary current front between the Florida Current and the littoral waters at 26^0 N latitude*. Ariel Meir and Manhar Dhanak. In preparation.
- *On oscillatory Lorentz forcing in boundary layers.* Ryan Seltzer and Manhar Dhanak In preparation.
- *Small-scale turbulence measurement in the Florida Current using an AUV*. Ken Holappa and M R Dhanak. In preparation.

SELECTED CONTRIBUTED PRESENTATIONS:

- *Vortex Destabilization by a Harmonic strain field*. M. R. Dhanak and M P Marshall. Proceedings of the International Vortex Wake Symposium, FAA, Washington, October, 1991.

- *Interaction between a finite vortex and a rolling up vortex sheet*. 2nd International Workshop on Vortex Flows. Montreal, August, 1995.
- *Small Scale Turbulence Measurements in the Gulf Stream Using an AUV*. M R Dhanak, K. Holappa, and R. G. Lueck. AGU Fall Meeting. 1998.
- *Ocean Flow Measurement using an Autonomous Underwater Vehicle*. K Holappa, M. R. Dhanak, S Smith and E An. Proceedings of the 1996 Symposium on AUV Technology, pp. 424-429. 1996.
- *A Model of the Juncture Vortex.* Ellie Monnier and M R Dhanak. ASCE Engineering Mechanics (1996). p. 1126. Editors: Y. K. Lin and T. C. Su. 1996.
- On a Conceptual Model for Turbulent Skin Friction. Chao Si and Manhar Dhanak. ASCE Engineering Mechanics (1996). p. 293-296. Editors: Y. K. Lin and T. C. Su. 1996.
- *Coherent Vortex model for turbulent skin friction reduction through spanwise oscillations*. M. R. Dhanak and C. Si. Euromech Colloquium No. 364 on "Dynamics and Statistics of Concentrated Vortices in Turbulent flows". Carry-le-Rouet, France. June, 1997.
- *Flow measurements in an atmospherically forced shallow water column during the passage of a cold front using a small AUV*. Edgar An, Manhar R Dhanak, Samuel Smith, Lynn K Shay and John Van Leer. AMS Meeting. Dallas. August, 1998.
- *On coherent vortex dynamics contribution to the statistics of the near-wall region*. M. R. Dhanak. APS Meeting. Philadelphia. November 1998.
- *Boundary-layer flow over corrugated surfaces: alternatives to the Falkner-Skan solutions*. P W Duck and M. R. Dhanak. APS Meeting. Philadelphia. November, 1998.
- *Small Scale Turbulence Measurements in the Gulf Stream Using an AUV*. M. R. Dhanak, K Holappa and R G Lueck. AGU Meeting. San Francisco. December 1998. Poster.
- *SFOMC, a Center for Coastal Ocean Observation*. M. R. Dhanak, AGU Fall Meeting. 1999.
- *Adverse Weather Experiment at SFOMC: Small AUVs as Measurement Platforms*. M. R. Dhanak SeaTech, Dania, Florida. February 1999.
- *South Florida Ocean Measurement Center*. M. R. Dhanak. Global Ocean Observatories Session. American Geophysical Union Meeting. San Francisco, December, 1999.
- *AUV Surveys of a Shallow Subtropical Water Column Beneath a Cold Atmospheric Front*. Manhar R. Dhanak, M. Brennan, M. Chernys, K. Holappa, R. G. Lueck, and S. Monismith. Poster 14th Symposium on Boundary Layers and Turbulence. Aspen, CO. 2000.
- *Integrated Observations From Fixed and AUV Platforms in the Littoral Zone at the SFOMC Coastal Ocean Observatory,* M R Dhanak. EOS Transactions Volume 82 No. 47. 2001.
- *Subsurface Observations in a Wind-Driven Flow in Littoral Waters off the East Coast of Florida* M. Chernys and M. Dhanak, EOS Transactions Volume 82 No. 47, Poster. 2001

- *Simulation of the Stratified Turbulent Ekman Layer*. B. C. Barr, D. N. Slinn, and M R Dhanak. EOS Trans. AGU, 83(47), 2002.

INVITED PRESENTATIONS

- *Wind-Induced Motion in a Coastal Water Column - An AUV-Based Survey.* M R Dhanak. University of Miami. February 2001.
- *Wind-Induced Motion in a Coastal Water Column - An AUV-Based Survey*. M R Dhanak. Università Degli Studi Di Firenze June 2001.
- *Structure in Oceanic Flows*. Imperial College, London, June 2001.
- Integrarted observations from fixed and AUV platforms in the littoral zone at the SFOMC Coastal Ocean Observatory. SACLENT, Italy. 2002.
- *Oceanographic Observations using an AUV Platform*. University of California, Berkeley. January, 2003.
- *Oceanographic Observations using an AUV Platform*. WHOI. June, 2003.
- *Overview of the NNR-NE Program at Florida Atlantic University: Design of Mission Effect Support Ships*. ONR Program Review. Washington DC, July, 2005
- Panelist – Building community capacity. Vision Broward Ft Lauderdale, Feb 2007.
- FAU Center of Excellence in Ocean Energy Technology. Florida Energy Commission's Advisory Group on Renewable Energy, Panama City. August 2007
- Panelist - Energy for Good, Vision Broward International Business Symposium, Ft Lauderdale, October 2007.

SELECTED TECHNICAL REPORTS:

- *Flow visualization over a moving wavy wall. I. Starting Flow*. Jointly with E A Acton, P J Brynston-Cross, C Ross and J Power. Topexpress Report. 1986.
- *Beamforming*. Jointly with D. J. Allwright. 1987. Topexpress Report.
- *Boundary layer noise - A review*. Jointly with P J Brazier- Smith. 1987. Topexpress Report.
- *Steady flow properties of an array of helical vortices over a co-axial cylinder*. Topexpress Report. 1988
- *Properties and stability of an array of finite vortices over a wavy wall*. M. R. Dhanak. Topexpress Report.
- *Flow visualization over a moving wavy wall. II Secondary Flow*. Jointly with E A Acton and J Power. Topexpress Report. 1989.
- *Parametric investigation of the stability of helical vortices over a co-axial cylinder*. Topexpress Report. 1989.
- *Motion and stability of helical vortices inside a co-axial cylinder*. Topexpress Report. 1989.
- *Drag reduction on submarines - A review*. 1989. Topexpress Report.
- *A model of the interaction between a flow manipulator and an approaching eddy*. 1987. Topexpress Report.
- *Drag reduction using a LEBU device*. Jointly with E A Acton and R Ford. Topexpress Report. 1989.

- *Transition prediction on swept wings*. 1990. Technical Report. Engineering Department, University of Cambridge.

Other Presentations:

Presentations at ONR Program Review meetings; American Physical Society; NASA Langley, Summers 1991, 1992, 1993; University of Miami; British Theoretical Mechanics Colloquia, annually between and various University Departments in UK.

5. PROFESSIONAL SERVICE

Professional Society Memberships:

Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA).

Member, American Society of Engineering Education (ASEE)

Member, American Society of Mechanical Engineers (ASME)

Member, American Society of Naval Engineers (ASNE)

Member, Society of Naval Architects and Marine Engineers (SNAME)

Member, American Physical Society

Reviewer of journal publications, and national and international research proposals

Host, ONR Review T- Craft Tools Review Meeting, SeaTech, FAU, February 2008, February 2009, and February, 2010, Feb 2011, Feb 2012

Member, National ASCE Fluid Dynamics Committee (2001 -02)

Host: US Commission on Ocean Science Policy Meeting, SeaTech, February 2002.

Editor: Ocean Engineering and Oceanography Series. Springer 2012 – present.

Expert Witness. Marsh Harbour Airport, Bahamas small aircraft crash. 2003.

Co-Guest-Editor: Special IEEE Ocean Engineering Journal on Ocean Observatories. 2000-2002

Chair, NSF Workshop on Establishing a Consortium of East Coast Ocean Observatories, SeaTech, March, 2001.

Session Chair: Real-time Interactive Oceanography Session, American Geophysical Union Meeting. San Francisco. December 2001.

Session Chair: Power Interface Session, AUV Payload Sensor Interface Meeting, ONR, Washington, October, 2001.

Guest Editor, IEEE Journal of Ocean Engineering 2000-2001

Session Chair. Global Ocean Observatories Session, American Geophysical Union Meeting, San Francisco. December 1999.

Co-Chair, NSF Workshop on South Florida Ocean Measurement Center, February, 1999

Chair, Departmental Research Committee (2009 – 2011)

Chair, College Research Committee (2009-present)

Member, University Research Committee (2009 - present)

Chair, Departmental Budget Committee (2007-09)

Member, College Personnel Committee (2000-02)

Member, Departmental Budget Committee (1998 – 2003)

Chair, Departmental Research Committee (1996 – 2003)