### **CURRICULUM VITAE**

Name: Paola Malanotte Rizzoli

**Place of Birth**: Lonigo (Vicenza), Italy

**Home Address**: 75 Cambridge Parkway, #W502

Cambridge, MA 02142

Work Address: Department of Earth, Atmospheric & Planetary Sciences

Massachusetts Institute of Technology

Room 54-1416

Cambridge, MA 02139

#### **EDUCATION**

1978 Ph.D., Physical Oceanography, Scripps Institution of Oceanography, University of California, Dissertation: "Solitary Rossby Waves Over Variable Relief and Their Stability Properties"

1968 Ph.D., Physics, University of Padua, Italy, "summa cum laude"
Dissertation: "Quantum-mechanical structure of biologically important molecules. Investigation of the complex molecules of nucleic acids"

1963 B.S., Physics and Mathematics, Lyceum "Benedetti," Venice, Italy; with highest honors

#### **EMPLOYMENT**

1997 - 2009	MIT Director of the Joint Program in Oceanography and Ocean
	Engineering between M.I.T. and the Woods Hole Oceanographic

Institution (WHOI)

1992- Professor of Physical Oceanography, M.I.T., Cambridge, Massachusetts

1987-1992 Associate Professor of Physical Oceanography with tenure, M.I.T.,

Cambridge, Massachusetts

1985-1987 Associate Professor of Oceanography, M.I.T., Cambridge, Massachusetts

1981-1985 Assistant Professor of Oceanography, M.I.T., Cambridge, Massachusetts

1978-1980 Cecil and Ida Green Scholar at the Institute of Geophysics and Planetary

Physics, University of California at San Diego

(when on leave of absence from Italy)

1976-1981	Senior Scientist (tenured) at the "Istituto Dinamica Grande Masse," CNR, Venice, Italy
1972-1976	Research Associate at the "Istituto Studio Dinamica Grande Masse," CNR, Venice, Italy
1971-1972	Post-doctoral Research Associate at the "Istituto Studio Dinamica Grande Masse," CNR, Venice, Italy
1970-1971	Post-doctoral fellowship at the "Istituto Studio Dinamica Grande Masse," Italian National Research Council (CNR), Venice, Italy
1969	Post-doctoral fellowship of the Italian National Council at the University

#### **HONORS**

Member of the Accademia dei Lincei, 2023

Enrico Marchi Invited lecture, University of Catania, June 2018

Rachel Carson invited lecture, American Geophysical Union, New Orleans Dec. 2017

Singapore-MIT SMART Program Chair 2013-2014- Nomination from the Provost

Recipient of the Recognition Award from the Prime Minister of the Italian Government for the contribution to the IPCC report winner of the 2007 Nobel Prize for Peace 2007

2008

Fellow of the American Geophysical Union, 2006

Fellow of the American Meteorological Society, 2002

Fellow of the International Union Geodesy & Geophysics, 2004

Winner of the 1998 Masi Prize of the Italian government for excellence in environmental sciences

Editor's Award from the American Meteorological Society as best reviewer of the *Journal of Physical Oceanography*, 1992

Cecil and Ida Green Scholar, Institute of Geophysics and Planetary Physics, Scripps Institution of Oceanography, 1978-1980

Member of the Faculty Policy Committee (FPC), 2010-2013

Member of the Committee of Undergraduate Performance (CAP),2011-12

Member of the MIT Committee for the search of the Dean of the School of Science, 2006-2007

Member of the Faculty Advisory Committee for the search of the MIT President, 2003-2004

Associate Chair of the MIT Faculty, 2003 – 2005

Chair of the Committee of Undergraduate Performance (CAP), 1997-2000

MIT Director of the Joint MIT/WHOI Program, 1997-2009

Member of the Committee on Women Faculty of the School of Science, Dean's Appointment, 1995-2000

Member of the Committee on the MIT Sea Grant College Program, 1998-2001.

Chair of JCPO 1995-1997.

Member of the Joint Committee for Physical Oceanography, (JCPO), 1985-1997.

Undergraduate Committee of Dept. of Earth, Atmospheric & Planetary Sciences, Chair, 1989-1992

Affirmative Action Committee - Dept. of Earth, Atmospheric & Planetary Sciences

Student Research Fund Committee - Dept. of Earth, Atmospheric & Planetary Sciences, 1983-1986

Member of the Foreign Scholarship Committee, MIT (Presidential appointment) 1984-1988

### PROFESSIONAL OUTSIDE ACTIVITIES

2025	P.Malanotte-Rizzoli and C. Solidoro
	Directors os the Monthly Seminar Series" Oceanography Unveiled II
	Trieste
2023-2024	P.Malanotte-Rizzoli and M.Sprovieri
	Directors of the Monthly Seminars "Oceanography Unveiled I" Venice
2023-2022-	-2021-2020-2019
	Director of the Venice Summer Schools in Environmental Science
	Collaboration between MIT and Italian Universities
	(IUAV, Padua University, Ca'Foscari University)
2018	Keynote address at the 1st Congresso Nazionale sul Clima- ENEA-
2010	Rome, July5-6
2017-2023	
2017-2023	Venice
2019-2022	
2019-2022	· 11
2008-2017	And Modeling) Project of SMART (Singapore-MIT Alliance for Research
	And Modeling ) Project of SMART (Singapore-WIT Alliance for Research And Technology), Singapore
2013-2017	Keynote Address at the IAPSO-IAMAS-IAG General Assemblies
2013-2017	Keynote Address at the Symposium for the 25 <sup>th</sup> anniversary of the POEM
2011	Programme, November 2011, Accademia dei Lincei, Rome
2009-2012	Member of the American Geophysical Union (AGU) Committee for the
2007 2012	Nomination of the AGU Fellows
2008 - 2009	
2000 2009	Meteorological Society
2006-2009	Member of the Committee on Strategic Advice to the US "Climate
2000 200>	Science Program Committee" of the National Research Council -US
	National Academies
2006-2007	Chair of the Scientific Program Committee of the General Assembly
2000 2007	of the International Union of Geodesy and Geophysics –Perugia Italy
2005-2008	Member of the Advisory Board (CAB) of the Community Climate
2003-2006	System Model (CCSM) of the National Center for Atmospheric Research
2005-2007	Member of the Panel on "Climate Variability and Change" of the US
2003-2007	National Academies
G+ 2022	
Sept. 2022	Invited speaker at the 75 <sup>th</sup> Anniversary of Woods Hole Oceanographic
2005 2000	Institution
2005-2008	Affiliate Scientist at the National Center for Atmospheric Research
2002-2004	Member of the Advisory Committee for Geosciences (AC/GEO) of
the	
	National Science Foundation
2000-2004	Editor of the Journal of Geophysical Research-Oceans
2000-2001	Chair of the UCAR Member's Nominating Committee
2000	Member of the Nominating Committee for the 2001 positions of the
	President and Counselors of the American Meteorological Society
1999-2003	President of the International Association for the Physical Sciences
	of the Oceans (IAPSO) of the International Union of Geodesy and
	Geophysics (IUGG)
1999-2005	Institutional Trustee of the University Corporation for Atmospheric
	Research (UCAR)
1999-2000	Member of the UCAR Committee for the search for new Director of

1998-2000	NCAR (National Center for Atmospheric Research) Chair of the UCAR Review Team of the Center for Climate Prediction of the National Centers for Environmental Prediction (NCEP)
1998- 1999	Member of the Advisory Panel of the Scientific Computing Division of The National Center for Atmospheric Research (NCAR)
1997-1998	Chair of the External Review Committee of the Laboratory for Hydrospheric Sciences, Goddard Space Flight Research Center
1997	Member of the Nominating Committee for the 1999 positions of President and Counselors of the American Meteorological Society
1996- 2014	Member of the Advisory Panel to the Consorzio Venezia Nuova, Venice, Italy for the construction of the mobile gates in the Venice Lagoon
1996-1997	Member of the Panel of Experts nominated by the Department of the Environment, Italian Government, Rome, to advise on the Flood Problem of Venice and the Construction of the Gates to the Venice Lagoon
1995-1999	Deputy Secretary General of the International Association for the Physical Sciences of the Ocean (IAPSO)
1995-1998	Member of the Advisory Panel for the National Centers for Environmental Prediction (NCEP) of UCAR
1993-1998	Member of the Earth Science Council of the Universities Space Research Association (USRA)
1989-1998	Member of the Scientific Advisory Committee (SAC) of the Climate Systems Modeling Project (CSMP) of the University Corporation for Atmospheric Research (UCAR)
1983-2005	Co-Chairperson of the International Program P.O.E.M. (Physical
	Oceanography of the Eastern Mediterranean ) sponsored by
1992-1994	UNESCO-IOC Member of the Outfall Monitoring Task Force for the Boston Harbor
1991-1992	Commonwealth of Massachusetts Member of the Search Committee for the Director of INO (Institute of Naval Oceanography) and the Navier-Stokes Chair at INO.
1991-1992	Member of the Standing Advisory Committee of INO (Institute of Naval Oceanography)
1989-1993	Member of the Steering and Advisory Committee for UCAR (University Corporation for Atmospheric Research) post-doctoral program in oceanographic modelling
1989-1992	Member of the Advisory Panel for the Marine Center Project on coastal water quality of the Sea Grant Program of MIT
1990-1992	President of the Italian Commission for Competition and Assignment of University Chairs in Physics of the Earth - Italy
1987-1990	Member of the Advisory Panel for Ocean Sciences Research of the National Science Foundation
1987-1990	Member of the American Meteorological Society Committee on Atmospheric and Oceanic Waves and Stability
1987-1990	Member of the Steering and Advisory Committee for the UCAR (University Corporation for Atmospheric Research) Visiting Scientific Program in Meteorology
1985-1989 1984-1988	Member of the "Working Group on Numerical Modelling" of WOCE President of the Committee of Physical Oceanography, Commission Internationale Exploration Scientifique de la Mer Mediterranee (CIESM), Monte Carlo, Monaco.

1980	Scientific Secretary of the 1st International Summer School "E. Fermi" in
1980	"Topics in Ocean Physics," Varenna, Italy, of the Italian Physical Society. Organizer and Scientific Coordinator of the COSPAR/SCOR/IUCRM
	Symposium "Oceanography from Space," sponsored by CNR of Italy, in Venice, 26-30 May.
1070 1002	
1979-1982	Principal Investigator of YINAMG (Yugoslavian-Italian Northern Adriatic
	Modeling Group) in the International Program of Scientific Cooperation
	between Italy and Yugoslavia.
1977	Scientific Coordinator and Principal Investigator of 1978 Northern Adriatic
	test-site in the EURASEP program for the calibration of NIMBUS-7 satellite
	(CZCS sensor).
1972-1974	Chief Scientist during oceanographic campaigns in the Adriatic Sea on
	oceanographic ships of the Italian National Research Council: ADRIATIC I –
	January-February, 1972, ADRIATIC II - July-August 1973, ADRIATIC III –
	November 1974

### PROFESSIONAL SOCIETY MEMBERSHIPS

Accademia dei Lincei, Rome

American Physical Society

American Geophysical Union

American Meteorological Society

International Union Geodesy Geophysics

(President of the International Union for the Physical Sciences of the Ocean, 1998-2003)

Oceanography Society

European Geophysical Society

Commission Internationale Exploration Scientifique Mer Mediterranee

(President of the Committee of Physical Oceanography, 1984-1988

#### **BOOKS**

- 15. *The Mediterranean Sea: Temporal Variability and Spatial Patterns*, ,G.L.Eusebi-Borzelli, M.Gacic, P.Lionello and **P.Malanotte-Rizzoli** eds., AGU and J.Wiley &Sons pub. pp.167, 2014
- 14. Watersheds, Bays and Bounded Seas: The Science and Management of Semi-Enclosed Marine Systems, Island Press vol. 70, E.R.Urban, B.Sundby, **P.Malanotte-Rizzoli** and J.M.Melillo eds., pp 288, 2008

- 13. Benguela: Predicting a Large Marine Ecosystem, Elsevier vol. 14, V. Shannon, G. Hempel, **P. Malanotte-Rizzoli**, C. Moloney and J. Woods eds, pp 410, 2006.
- 12. *Mediterranean Climate Variability*, Elsevier, Development in Earth and Environmental Sciences, P. Lionello, **P. Malanotte-Rizzoli**, and R. Boscolo eds, pp 421, 2006.
- 11. *Interhemispheric Water Exchange in the Atlantic Ocean*, Elsevier Oceanographic Series, G. Goni and **P. Malanotte-Rizzoli**, eds., Elsevier Oceanographic Series, no. 68, pp. 506, 2003.
- 10. Dynamics of Atmospheres and Oceans Special Issue, Ocean Circulation Model Evaluation Experiments for the North Atlantic Basin, E,P.Chassignet and P.Malanotte-Rizzoli eds, Dyn. Atmos. Oceans vol.32, nos-3-4, 2000
- 9. Dynamics of Atmospheres and Oceans Special Issue, A tribute to Prof. Allan R. Robinson, D.B. Haidvogel, **P. Malanotte-Rizzoli**, and D.J. McGillicuddy, eds., Dyn. Atmos. Oceans, vol. 29, nos. 2-4, 1999.
- 8. The Eastern Mediterranean as a Laboratory Basin for the Assessment of Contrasting Ecosystems, P. Malanotte-Rizzoli and V.E. Eremeev, eds., Kluwer Academic Publishers, NATO Science Series, vol. 51, 521 pp., 1999.
- 7. *Modern Approaches to Data Assimilation in Ocean Modeling*, **P. Malanotte-Rizzoli**, ed., Elsevier Publishing Co., Elsevier Oceanography Series, Vol. 61, 455 pp., 1996.
- 6. *The General Circulation of the Oceans*, **P. Malanotte-Rizzoli**, ed., Instituto Veneto di Scienze, Lettere ed Arti, Venice, Italy, Environmental Dynamics Series, III, 366 pp., 1994.
- 5. Ocean Processes in Climate Dynamics: Global and Mediterranean Examples, P. Malanotte-Rizzoli and A.R. Robinson, eds., NATO/Advanced Study Institute, Kluwer Academic Publishers, Series C: Mathematical and Physical Sciences, vol. 419, 437 pp., 1994.
- 4. Deep Sea Research Special Issue, Topical Studies in Oceanography, Physical Oceanography of the Eastern Mediterranean (P.O.E.M.), A.R. Robinson and **P. Malanotte-Rizzoli**, eds., vol. 40, no. 6, 1993.
- 3. *The North Atlantic Current System: A Scientific Report*, **P. Malanotte-Rizzoli** and T. Rossby, eds., Proc. WHOI Workshop, 19-20 April, 132 pp., 1993.
- 2. Dynamics of Atmospheres and Oceans Special Issue, The Mediterranean Sea, **P. Malanotte-Rizzoli** and A.R. Robinson, eds., Dyn. Atmos. Oceans, vol. 15, 3-5, 1991.
- 1. *Topics in Ocean Physics*, A.R. Osborne and **P. Malanotte-Rizzoli**, eds., North-Holland Publishing Co., 550 pp., 1982

#### **REFEREE FOR:**

Dynamics of Atmospheres and Oceans

Deep-Sea Research
Journal of Marine Research
Journal of Physical Oceanography
Journal of Geophysical Research
Journal of the Atmospheric Sciences
Tellus
National Science Foundation
National Oceanic Atmospheric Administration
National Aeronautics Space Administration

# **Courses Taught**

#### Italy:

Physical Oceanography, Istituto Studio Dinamica Grandi Masse, Venice, Italy, and University of Padua, Padua, Italy, 1978, 1979, 1980.

Waves in the Ocean, Fall Semester courses at the Istituto di Fisica Teorica, University of Trieste, Trieste, Italy, 1976-1980.

M.I.T.	
19.76	Dynamical Oceanography, 1981-1983 (G)
19.71	Waves in the Ocean and Atmosphere, 1983-1985 (G)
12.24	Topics in the Physics of Atmospheres and Oceans, 1984-1986 (G)
12.21	Physics of the Oceans, 1985-1989 (U)
12.93	Numerical Methods in Meteorology & Physical Oceanography, 1986-1988 (G)
12.790	Introduction to Observational Physical Oceanography, 1987-1989 (G)
12.003	Introduction to Meteorology and Physical Oceanography, 1990- (U)
12.S11	Freshman Seminar, Physics of the Oceans, 1990-1992 (U)
12.801	Steady Circulation of the Oceans, 1991-1993 (G)
12.803	Quasi-balanced Circulation in Oceans and Atmospheres, 1995-1998
12.802	Waves in the Ocean and Atmosphere, 1997-2001
12.S.54	Freshman Seminar, The role of the ocean in Global Change, 1993-to present (U)
12.801	Steady Circulation of the Oceans, 2003-2005 (G)
12.950	Equatorial Oceanography, 2003 (G)
12.802	Waves in the Ocean and Atmosphere, 2006-2008 (G)
12.801	General circulation of the oceans, Spring 2014
12.800	Fluid Dynamics of the Atmosphere and Oceans, Fall 2014

# Student Theses Supervised as Principal Advisor

### Italy - Ph.D. in Physics with Thesis in Physical Oceanography:

F. Dell'Orto, 1977 A. Bergamasco, 1978 V. Barale, 1978 M. Zicarelli, 1979

# **MIT** Undergraduate Students

Jarelyn Watanabe, Major in Physics/Oceanography, Spring 1990 Stephen Jayne, Major in Earth Sciences/Mathematics, Spring 1994 Elise Olson, UROP, Summer 2004 Chris Follet, UROP, Spring 2005 Christie Wood, Major in Mathematics/Oceanography, Spring 2005 Nicholas Loyd, 2004 - 2005

## **MIT** Graduate Students:

Piero Malguzzi Ph.D. in Meteorology, finished Fall 1984

Coherent structures in a baroclinic atmosphere

Kevin Speer, MS in Oceanography, finished December 1985

The influence of geothermal sources on deep ocean temperature, salinity, and flow fields

Paul Hancock, MS in Meteorology, finished May 1986

An observational study of blocking with regard to the theory of coherent structures in a baroclinic atmosphere

Elizabeth Welsh, MS in Oceanography, finished May 1986

The relationship of topographic waves on the continental rise to Gulf Stream fluctuations

M. Ross Vennell, Ph.D. in Oceanography, finished July 1989

The influence of a steady baroclinic deep ocean on the shelf

David Chester MS in Oceanography, finished May 1988

Acoustic tomography in the straits of Florida

Xiaoming Wang, Ph.D. in Oceanography, finished August 1992

*Interaction of an eddy with a continental slope* 

David Chester, Ph.D. in Oceanography, finished January 1993

A tomographic view of the Gulf Stream southern recirculation gyre at 38°N, 55 W

James R. Gunson, MS in Oceanography, finished April 1993

Time-dependent assimilation of CTD data into an open ocean Rossby wave model

Antonietta Capotondi, finished February 1993

Assimilation of altimeter data in a quasi-geostrophic model of the Gulf Stream System: a dynamical perspective

Kirill Pankratov, Ph.D. in Oceanography, finished January 1994

Influence of topography on the dynamics of baroclinic oceanic eddies

Eric Won, MS in Oceanography, finished June 1994

Sensitivity of a general circulation inverse model to sub-grid scale parameterization coefficients

James Gunson, Ph.D. in Oceanography, finished July 1995

Estimating open-ocean boundary conditions: sensitivity studies

François Primeau, Ph.D. in Oceanography, finished June 1998

Multiple equilibria and low-frequency variability of wind-driven ocean models

Caixia Wang, MS in Oceanography, finished June 1999

Diagnosis of physical and biological controls on phytoplankton distribution in the Gulf of Maine-Georges Bank region

Mikhail Solovev, Ph.D. in Oceanography, finished July 1999

Assessment of mesoscale eddy parameterizations for coarse resolution ocean models

Ashwini Deshpande, MS in Oceanography, finished June 2000

Edge analysis of seasonal variability in chlorophyll maps of the Black Sea.

Markus Jochum, Ph.D. in Oceanography, finished March 2002.

On the pathways of the return flow of the Meridional Overturning Circulation in the tropical Atlantic.

Sarah L. Russell, Ph.D. in Oceanography, Finished February 2003

Shelf Currents, Ice and Wind: a Numerical Modeling Study.

Baylor Fox-Kemper, Ph.D. in Oceanography, Finished June 2003

*Eddies and Friction: Removal of Vorticity from the Wind-Driven gyre.* 

Jinbo Wang, MS in Oceanography, Finished September 2008

On the warm bias along the South-West African coast in coupled models: an oceanic perspective

Jinbo Wang, PhD in Oceanography, Finished June 2011

Instabilities of an eastern boundary current with and without large-scale flow Influence

# Member of the Ph.D. Thesis Committees for:

# Oceanography

Bruce Cornuelle, finished 1983

Rui Xin Huang, finished 1984

Stephen Meacham, finished 1984

Melinda Hall, finished 1985

Leslie Rosenfield, finished 1985

Paola Cessi, finished 1987

Eli Tziperman, finished 1987

Sophie Wacogne, finished 1988e

Kevin Speer, finished 1988

Jack Barth, finished 1988

Wendy Smith, finished 1988

Stephen Rintoul, finished 1988

Lorenzo Polvani, finished 1988

Joyce Fredrerik, finished 1988

Tamara Wood, finished 1988 (MS)

Richard Signell, finished 1989

Elise Ralph, finished 1991 (MS)

Alison Macdonald, finished 1991 (MS)

Rebecca Schudlich, finished 1991

Changsheng Shen, finished 1992

Susan Wijffels, finished 1993

Cecilia Mauritzen, finished 1993

Martha O'Neil, finished 1993

Anand Gnanadesikan, finished 1994

Elise Ralph, finished 1994

Edward Dever, finished 1994

Ari Epstein, finished 1995 Alison Macdonald, finished 1995 Bingjian Ni, finished 1996 James Pringle, finished 1998 Steven Jayne, finished 1999 David Sutherland, finished 2007 Natalia Beliakova, finished 1999 Sandra Werner, finished 1999 Michael Chechelnitzsky, finished 1999 Albert Fisher, finished 2000 Linda Rasmussen, finished 2003 Rachel Stanley, finished 2007 Vikram Khade, finished 2008 Adel Ahanin, finished 2008 Jonathan Moskaitis, finished 2009 Martha Buckley, finished 2011 Wilken-Jon von Happen, finished 2013 Ping Zhai, finished June 2014

### Meteorology

Richard Deininger, finished 1983 V. Krishnamurthy, finished 1985 Peter Neilley, finished 1990 Robert Black, finished 1990 Nilton Renno, finished 1992 Michael Morgan, finished 1993

### Geophysics

V. Zlotnicky, finished 1983

# Ocean Engineering

Richard Pawlowicz, finished August 1993

### **Postdoctoral Fellows**

Stephen Meacham, 1984-1985 Roberta Young, 1985-1986 Dong Shan Ko, 1987-1989 Keith Haines, 1988-1990 Louise Perkins, 1988-1990 Philip Bogden, 1992-1994 Lisan Yu, 1993-1996 Julia Levin, 1995-1997 Shi Jiang, 1994-1998 Tomoko Inui, 1998-2001 Jingxi Lu, 1999-2000 Mark Buehner, 2000-2002 Xiaoyun Zang, 2001-2003 Markus Jochum, 2002-2004 Sang Jin Lyu, 2003-2005 Jun Wei, 2006 –2009

# **Research Scientists**

Roberta Young, 1986-1998 Jun Wei, 2009-2013 Danya Xu 2008-Pengfei Xue 2012-Yunfang Sun 2014-

# **Visiting Scientists**

Andrea Bergamasco, 1987, 1988, 1990, 1991, 1992, 1993, 1994, 1997 Piero Lionello, 1988-1989 Salvatore Marullo and Rosalia Santoleri 1993 Salvatore Mazzola, 1993-1994 Temel Oguz, 1993-1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002 Maurizio Ribera, 1996-1997 Ernesto Napolitano, 1996, 1997, 1998, 2000 Gianmaria Sannino, 2004, 2005