

Edward H. Ryan
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Curriculum Vitae

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Education

M.S. in Physics (thesis option in atmospheric dynamics)	University of Cincinnati	December, 1991
M.S. in Physics (non-thesis option), plus 6 semester hours in Engineering	University of Akron	May, 1988
B.S. in Physics with minor in Mathematics, plus 8 quarter hours in Computer Science and 12 quarter hours in Engineering	Youngstown State University	March, 1986

M.S. Thesis

Critical Level Directional Filtering of Atmospheric Gravity Waves:
A Comparison of OH Airglow Observations and a Wind Profile Model

Thesis involved computing the magnitude and direction of atmospheric gravity waves subject to blocking by horizontal winds, i.e. critical layer directional filtering. To accomplish this, a wind profile model was developed using the latest climatological background winds and numerical models of tidal modes. Data from the wind profiles was then analyzed to determine blocking diagrams, which show the forbidden directions and phase velocities of wave propagation at a given height. The blocking diagrams were then compared with experimental observations of gravity waves in airglow to determine the accuracy of the wind profiles and help explain critical layer theory. (thesis advisor Dr. Tai-Fu Tuan, 2 papers published).

Research Experience

Research Associate	MPO	University of Miami	02/1992 - present
Working primarily for Dr. Arthur Mariano on many different projects.			
Graduate Research Assistant	Physics Department	University of Cincinnati	09/1990 - 12/1991
Worked for Dr. Tai-Fu Tuan on U.S. Air Force Geophysics Laboratory funded research.			
<i>MPO = Meteorology & Physical Oceanography</i>			

Professional Awards

Research Employee of the Year, The Rosenstiel School, University of Miami, 2001.

Professional Memberships

American Geophysical Union (AGU) - member since 1990.

Teaching Experience

Research Associate MPO University of Miami 02/1992 - present
Assist graduate students with data processing, computer programming and plotting.

Laboratory/Recitation Instructor Physics Department University of Cincinnati 09/1988 - 06/1990
Taught 6 Engineering Physics Laboratory classes, 11 Engineering Physics Recitation sections and tutored 1 Summer Minority Engineering Bridge Program.

Laboratory Instructor Physics Department University of Akron 09/1986 - 05/1988
Taught 13 Engineering Physics Laboratory classes.

Laboratory Assistant Physics Department Youngstown State University 03/1984 - 12/1985
Assisted Instructor in 6 General Physics Laboratory classes.

MPO = Meteorology & Physical Oceanography

Teaching Awards

Householder Award, Physics Department, University of Akron, May 1988.

Publications

A full list of my publications can be found on my Google Scholar page:

<https://scholar.google.com/citations?user=dsSjXs4AAAAJ>

Journal Articles

1993

Evidence of Preferential Directions for Gravity Wave Propagation Due to Wind Filtering in the Middle Atmosphere.

M.J. Taylor, E.H. Ryan, T.F. Tuan, and R. Edwards,

J. of Geophys. Res., **98** (A4), 6047-6058, 1993.

<http://onlinelibrary.wiley.com/doi/10.1029/92JA02604/full>

1996

Principle Component Analysis of biological and physical variability in a Gulf Stream meander crest.

A.J. Mariano, G.L. Hitchcock, C.J. Ashjian, D.B. Olson, T. Rossby, E.H. Ryan, S.L. Smith,

Deep-Sea Research, **43** (9), 1531-1565, 1996.

<http://www.sciencedirect.com/science/article/pii/S0967063796000210>

1997

Occurrence Characteristics of Mesospheric Gravity Waves at 51°N.

D.H. Geirs, Y. Sahai, L.L. Cogger, E.H. Ryan,

J. of Atmospheric and Solar-Terrestrial Physics, **59** (10), 1197-1203, 1997.

<http://www.sciencedirect.com/science/article/pii/S1364682696001174>

Property fields in the effluent plume of the Mississippi River.

G.L. Hitchcock, W.L. Wiseman, Jr., W.C. Boicourt, A.J. Mariano, N. Walker, T. Nelsen and E.H. Ryan,

Journal of Marine Systems, **12** (1-4), 109-126, 1997.

<http://www.sciencedirect.com/science/article/pii/S0924796396000929>

1998

Mean and Near-Inertial Ocean Current Response to Hurricane Gilbert.

L.K. Shay, A.J. Mariano, S.D. Jacob, E.H. Ryan,

J. of Physical Oceanography, **28** (5), 858-889, 1998.

[http://journals.ametsoc.org/doi/abs/10.1175/1520-0485\(1998\)028%3C0858:MANIOC%3E2.0.CO%3B2](http://journals.ametsoc.org/doi/abs/10.1175/1520-0485(1998)028%3C0858:MANIOC%3E2.0.CO%3B2)

2001

Predictability of Drifter Trajectories in the Tropical Pacific Ocean.

T.M. Özgökmen, L.I. Piterbarg, A.J. Mariano, and E.H. Ryan,

J. of Physical Oceanography, **31** (9), 2691-2720, 2001.

[http://journals.ametsoc.org/doi/abs/10.1175/1520-0485\(2001\)031%3C2691:PODTIT%3E2.0.CO%3B2](http://journals.ametsoc.org/doi/abs/10.1175/1520-0485(2001)031%3C2691:PODTIT%3E2.0.CO%3B2)

2004

Seasonal and interannual studies of vortices in SST data.

Q. Yang, B. Parvin, A.J. Mariano, E.H. Ryan, R. Evans, and O.B. Brown,

Int. J. of Remote Sensing, **25** (7-8), 1371-1376, 2004. Oceanography from Space Venice 2000 special issue.

<http://www.tandfonline.com/doi/abs/10.1080/01431160310001592319>

A practical hybrid model for predicting the trajectories of near-surface drifters.

N. Paldor, Y. Dvorkin, A.J. Mariano, T.M. Özgökmen, and E.H. Ryan,

J. Atmos. & Ocean. Tech., **21** (8), 1246-1258, 2004.

[http://journals.ametsoc.org/doi/abs/10.1175/1520-0426\(2004\)021%3C1246:APHMFP%3E2.0.CO%3B2](http://journals.ametsoc.org/doi/abs/10.1175/1520-0426(2004)021%3C1246:APHMFP%3E2.0.CO%3B2)

2005

Pollution Release Tied to Invariant Manifolds: A Case Study for the Coast of Florida.

F. Lekien, C. Coulliette, A.J. Mariano, E.H. Ryan, L.K. Shay, G. Haller and J. Marsden,

Physica D, **210**, Issues 1-2, 1-20, 2005.

<http://www.sciencedirect.com/science/article/pii/S0167278905002502>

2011

On the modeling of the 2010 Gulf of Mexico Oil Spill.

A.J. Mariano, V.H. Kourafalou, A. Srinivasan, H. Kang, G.R. Halliwell, E.H. Ryan, M. Roffer,

Dynamics of Atmospheres and Oceans, **52**, 1, 322-340, September 2011.

<http://www.sciencedirect.com/science/article/pii/S0377026511000340>

2012

On multi-scale dispersion under the influence of surface mixed layer instabilities and deep flows.

Tamay M. Özgökmen, Andrew C. Poje, Paul F. Fischer, Hank Childs, Harinarayan Krishnan, Christoph Garth, Angelique C. Haza, Edward Ryan.

Ocean Modelling, **56**, 16-30, October 2012.

<http://www.sciencedirect.com/science/article/pii/S1463500312001035>

2014

Research Overview of the Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE).

Özgökmen, T.M., F. J. Beron-Vera, D. Bogucki, S. Chen, C. Dawson, W. Dewar, A. Griffa, B.K. Haus, A.C. Haza, H. Huntley, M. Iskandarani, G. Jacobs, B. Jagers, A.D. Kirwan, Jr., N. Laxague, B. Lipphart, Jr., J. MacMahan, A.J. Mariano, J. Olascoaga, G.

Novelli, A.C. Poje, A.J.H.M. Reniers, J.M. Restrepo, B. Rosenheim, E.H. Ryan, C. Smith, A. Soloviev, S. Venkataramani, G. Zha, P. Zhu (2014).

International Oil Spill Conference Proceedings, **2014**(1), 544-560, May 2014.

<http://www.ioscproceedings.org/doi/abs/10.7901/2169-3358-2014.1.544>

Submesoscale dispersion in the vicinity of the Deepwater Horizon spill.

Poje, A.C., T.M. Özgökmen, B. Lipphardt, Jr., B. Haus, E.H. Ryan, A.C. Haza, G. Jacobs, A.J.H.M. Reniers, J. Olascoaga, G. Novelli, A. Griffa, F.J. Beron-Vera, S. S. Chen, P. Hogan, E. Coelho, A.D. Kirwan, Jr., H. Huntley, A.J. Mariano (2014).

Proceedings of the National Academy of Sciences, **111**(35), 12693-12698, Sep 2, 2014.

<http://www.pnas.org/content/111/35/12693.short>

Data Assimilation Considerations for Improved Ocean Predictability during the Gulf of Mexico Grand Lagrangian Deployment (GLAD),

Jacobs, G.A., B. Bartels, D. Bogucki, F.J. Beron-Vera, S. S. Chen, E.F. Coelho, M. Curcic, A. Griffa, M. Gough, B.K. Haus, A.C. Haza, R.W. Helber, P.J. Hogan, H. Huntley, M. Iskandarani, F. Judt, A.D. Kirwan Jr., N. Laxague, A. Valle-Levinson, B. Lipphardt, A. Mariano, H.E. Ngodock, G. Novelli, M.J. Olascoaga, T.M. Özgökmen, P.G. Thoppil, A.C. Poje, A. J.H.M. Reniers, C.D. Rowley, E.H. Ryan, S.R. Smith, P.L. Spence, and M. Wei (2014).

Ocean Modelling, **83**, 98-117, Nov 2014.

<http://www.sciencedirect.com/science/article/pii/S1463500314001346>

2015

Ocean current estimation using a multi-model ensemble Kalman filter during the grand lagrangian deployment experiment (GLAD).

Coelho E., P. Hogan, G. Jacobs, P. Thoppil, H. Huntley, B. Haus, B. Lipphardt, Jr., A. D. Kirwan, Jr., E. H. Ryan, J. Olascoaga, G. Novelli, F. Beron-Vera, A. C. Haza, A. C. Poje, A. Griffa, T.M. Özgökmen, D. Bogucki, S. S. Chen, M. Curcic, M. Iskandarani, F. Judt, N. Laxague, A. J. Mariano, A.J.H.M. Reniers, C. Smith, A. Valle-Levinson, and M. Wei.

Ocean Modelling, **87**, 86-106, March 2015.

<http://www.sciencedirect.com/science/article/pii/S1463500314001577>

2016

Tracking the Hercules 265 marine gas well blowout in the Gulf of Mexico.

Romero, I., T. Özgökmen, S. Snyder, P. Schwing, B. O'Malley, F. Beron-Vera, M. Olascoaga, P. Zhu, E. Ryan, S. Chen, D. Wetzel, D. Hollander, S. Murawski.

JGR-Oceans, **121**(1), 706-724, Gulf Oil Spill special section, January 2016.

<http://onlinelibrary.wiley.com/doi/10.1002/2015JC011037/full>

Statistical properties of the surface velocity field in the northern Gulf of Mexico sampled by GLAD drifters.

Mariano, A. J., E. H. Ryan, H. S. Huntley, L.C. Laurindo, E. Coelho, A. Griffa, T. M. Özgökmen, M. Berta, D. Bogucki, S. Chen, M. Curcic, M. Gough, B. K. Haus, A. C. Haza, P. Hogan, M. Iskandarani, G. Jacobs, A. D. Kirwan, Jr., N. Laxague, B. Lipphardt, Jr., M. G. Magaldi, G. Novelli, A. Reniers, J. M. Restrepo, C. Smith, A. Valle-Levinson, and M. Wei.

JGR-Oceans, Gulf Oil Spill special section, accepted.

[JGR-Oceans, Gulf Oil Spill special section, accepted.](#)

Book Chapters

"Where is the Diffusivity?", Mariano, A.J. and E.H. Ryan. Lagrangian Analysis and Predictability of Coastal and Ocean Dynamics, Griffa, A., D. Kirwan, A.J. Mariano, T. M. Ozgokmen, and T. Rossby, editors. Cambridge University Press, 2007, 83-85. (partial chapter).

"Lagrangian Analysis and Predictability of Coastal and Ocean Dynamics", Mariano, A.J. and E.H. Ryan., Lagrangian Analysis and Predictability of Coastal and Ocean Dynamics, Griffa, A., D. Kirwan, A.J. Mariano, T.M. Ozgokmen, and T. Rossby, editors. Cambridge University Press, 2007, 423-479.

Technical Reports

The Mariano Global Surface Velocity Analysis 1.0.

A.J. Mariano, E.H. Ryan, B.D. Perkins, S. Smithers,
U.S. Coast Guard Technical Report, CG-D-34-95, pp. 55, July 1995,
([MGSVA](#)).