

# ANGEL RUIZ-ANGULO

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Associate Professor in Physical Oceanography  
*Institute of Earth Sciences, University of Iceland, Reykjavík, Iceland*

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## Education

- **California Institute of Technology**—2008  
PhD in Mechanical Engineering
- **California Institute of Technology**—2004  
MsC in Mechanical Engineering
- **Universidad Nacional Autónoma de México**—2002  
BS in Mechanical Engineering (Honors)

## Professional Appointments

- **University of Iceland** —2021–  
Associate Professor in Physical Oceanography, Institute of Earth Sciences
- **Icelandic Meteorological Office, IMO**—2018–2021  
Research Scientist, Physical Oceanographer. Process. Research Department
- **Universidad Nacional Autónoma de México, UNAM**  
**Centro de Ciencias de la Atmósfera, CCA**—2018  
Associate Research professor, Ocean-Atmosphere Interactions group
- **Universidad Nacional Autónoma de México, UNAM**  
**Centro de Ciencias de la Atmósfera, CCA**—2012–2017  
Early Associate Research professor, Ocean-Atmosphere Interactions group
- **Universidad Nacional Autónoma de México, UNAM**  
**Centro de Ciencias de la Atmósfera, CCA**—2010–2012  
Postdoctoral Fellow, Ocean-Atmosphere interactions group
- **ERCA (European Research Courses on Atmospheres), Grenoble, France**—Jan-Feb 2012  
Fellow of the European Research Courses on Atmospheres  
Director: Dr. Claude Brouton.
- **Columbia University**  
**Lamont-Doherty Earth Observatory, LDEO**—2008-2010  
Postdoctoral Research Scientist, Ocean and Climate Physics Department
- **(WHOI) Woods Hole Oceanographic Institute, Massachusetts, US**—2007  
Fellow of the 2007 WHOI Geophysical Fluid Dynamics Program

## Teaching Experience

- **Universidad Nacional Autónoma de México—2013–2018**
  - Geophysical Fluid Dynamics (Undergraduate) – 2013, 2014, 2015, 2016, 2017
  - Ocean Circulation and Climate (Undergraduate) – 2014
  - Atmospheric Dynamics (Graduate) – 2014, 2016
  - Advanced Atmospheric Dynamics (Graduate) – 2015
  - Earth Sciences selected topics workshop I (Undergraduate) – 2015, 2016, 2017
  - Earth Sciences selected topics workshop II (Undergraduate) – 2015, 2016, 2017
- **California Institute of Technology—**
  - Teacher Assistant for Thermodynamics(Graduate and Undergraduate)
  - Teacher Assistant for Heat Transfer (Undergraduate)
  - Teacher Assistant for Engineering Design Laboratory (Undergraduate, Stirling Engines Contest)
  - Mentor for the Summer Undergraduate Research Fellowships (SURF) program

## Publications

44. Yu-Sheng Sun, Diego Melgar, **Ruiz-Angulo, Angel**, Athanassios Ganas, Tuncay Taymaz, Brendan Crowell, Xiaohua Xu, Varvara Tsironi, Ilektra Karasante, Seda Yolsal-Çevikbilen, et al. The 2020 mw 7.0 samos (eastern aegean sea) earthquake: joint source inversion of multi-type data, and tsunami modeling. *Geophysical Journal International*, page ggae082, 2024
43. Charly de Marez, **Ruiz-Angulo, Angel**, and Mathieu Le Corre. Structure of the bottom boundary current south of iceland and spreading of deep waters by submesoscale processes. *Geophysical Research Letters*, 51(5):e2023GL107508, 2024
42. Claudia Inés Rivera-Cárdenas, Oscar E. Jurado, **Ruiz-Angulo, Angel**, and Josué Arelano. Mobile mini-doas measurements of the outflow of nitrogen dioxide from the toluca valley metropolitan area, mexico. *Renewable energy, biomass amp; sustainability*, 6(1):1–9, January 2024
41. Erick R. Olvera-Prado, Rosario Romero-Centeno, Jorge Zavala-Hidalgo, Efraín Moreles, and **Ruiz-Angulo, Angel**. Contribution of the wind, loop current eddies, and topography to the circulation in the southern gulf of mexico. *Ocean Dynamics*, 2023
40. Sean R. Santellanes, **Angel Ruiz-Angulo**, and Diego Melgar. Tsunami waveform stacking and complex tsunami forcings from the hunga-tonga eruption. *Pure and Applied Geophysics*, dec 2022
39. Alejandra García-Madrigal, **Angel Ruiz-Angulo**, and Steffen Mischke. Intertidal ostracoda from fossvogur and kópavogur bays (SW iceland): Diversity and distribution. *Journal of Sea Research*, 190:102303, dec 2022
38. Andrea Burgos-Cuevas, Adolfo Magaldi, David K. Adams, Michel Grutter, Jorge L. García Franco, and **Angel Ruiz-Angulo**. Boundary layer height characteristics in mexico city from two remote sensing techniques. *Boundary-Layer Meteorology*, nov 2022

37. Andrea Burgos-Cuevas, **Angel Ruiz-Angulo**, Carlos Alberto Palacios Morales, Karina Ramos Musalem, and Cruz Daniel García Molina. Experimental downslope gravity currents over a synthetic topography. *ATMÓSFERA*, aug 2022
36. Diego Melgar, **Ruiz-Angulo, Angel**, Brendan W. Crowell, Eric J. Fielding, and Ericka A. Solano-Hernandez. The Mechanisms of Tsunami Amplification and the Earthquake Source of the 2021 M 7 Acapulco, Mexico, Earthquake. *Bulletin of the Seismological Society of America*, 09 2022
35. JGC Pérez, E Pallàs-Sanz, M Tenreiro, T Meunier, Julien Jouanno, and **Ruiz-Angulo, A.** Overturning instabilities across a warm core ring from glider observations. *Journal of Geophysical Research: Oceans*, 127(4):e2021JC017527, 2022
34. Mathieu Gentil, France Floc'h, Thomas Meunier, **Ruiz-Angulo, Angel**, Gildas Roudaut, Yannick Perrot, and Anne Lebourges-Dhaussy. Internal solitary waves on the nw african shelf: A heuristic approach to localize diapycnal mixing hotspots. *Continental Shelf Research*, page 104492, 2021
33. Thomas Meunier, Enric Pallàs Sanz, Charly de Marez, Juan Pérez, Miguel Tenreiro, **Ruiz-Angulo, Angel**, and Amy Bower. The dynamical structure of a warm core ring as inferred from glider observations and along-track altimetry. *Remote Sensing*, 13(13):2456, 2021
32. A. Burgos-Cuevas, D. K. Adams, J. L. Garcia-Franco, and **A. Ruiz-Angulo**. A Seasonal Climatology of the Mexico City Atmospheric Boundary Layer. *Boundary-Layer Meteorology*, pages 1–24, 2021
31. Fenix Garcia-Tigreros, Mihai Leonte, Carolyn D. Ruppel, **Angel Ruiz-Angulo**, Dong Joo Joung, Benjamin Young, and John D. Kessler. Estimating the Impact of Seep Methane Oxidation on Ocean pH and Dissolved Inorganic Radiocarbon Along the U.S. Mid-Atlantic Bight. *Journal of Geophysical Research: Biogeosciences*, 126(1), jan 2021
30. Efraín Moreles, Jorge Zavala-Hidalgo, Benjamín Martínez-López, and **Angel Ruiz-Angulo**. Influence of stratification and Yucatan Current transport on the Loop Current Eddy shedding process. *Journal of Geophysical Research: Oceans*, nov 2020
29. Diego Melgar, **Ruiz-Angulo, Angel**, Xyoli Pérez-Campos, Brendan W Crowell, Xiaohua Xu, Enrique Cabral-Cano, Michael R Brudzinski, and Luis Rodriguez-Abreu. Energetic Rupture and Tsunamigenesis during the 2020 Mw 7.4 La Crucecita, Mexico Earthquake. *Seismological Research Letters*, 10 2020
28. Mihai Leonte, Carolyn D Ruppel, **Ruiz-Angulo, Angel**, and John D Kessler. Surface Methane Concentrations Along the Mid-Atlantic Bight Driven by Aerobic Subsurface Production Rather Than Seafloor Gas Seeps. *Journal of Geophysical Research: Oceans*, 125(5), 2020
27. **Ruiz-Angulo, Angel**, Carolyn D. Ruppel, Gerald Hatcher, and John D. Kessler. Current velocities as a function of depth measured by lowered ADCP, LADCP, on the research vessel Hugh R. Sharp in the Mid-Atlantic Bight from 2017-08-26 to 2017-09-03 (NCEI Accession 0209236). *NOAA National Centers for Environmental Information, Dataset*, 2020
26. Thomas Meunier, Julio Sheinbaum, Enric Pallàs-Sanz, Miguel Tenreiro, José Ochoa, **Angel Ruiz-Angulo**, Xavier Carton, and Charly de Marez. Heat Content Anomaly and Decay of Warm-Core Rings: the Case of the Gulf of Mexico. *Geophysical Research Letters*, 47(3), feb 2020
25. Erika López-Espinoza, **Ruiz-Angulo, Angel**, Jorge Zavala-Hidalgo, Rosario Romero-Centeno, and Josefina Escamilla-Salazar. Impacts of the Desiccated Lake System on Precipitation in the Basin of Mexico City. *Atmosphere*, 10(10):628, 2019

24. Thomas Meunier, Enric Pallàs-Sanz Sanz, Miguel Tenreiro, José Ochoa, **Ruiz-Angulo, Angel**, and Christian Buckingham. Observations of Layering under a Warm-Core Ring in the Gulf of Mexico. *Journal of Physical Oceanography*, 49(12):3145–3162, 2019
23. **Ruiz-Angulo, A.**, K. Jónsdóttir, R.H. Thrastarson, B. Halldorsson, V. Drouin, Grímsdóttir H., and S. Jónsson. Preliminary simulations for tsunami hazard in connection with a major earthquake on the Húsavík-Flatey fault. *Proceedings to the Northquake 2019 workshop, Húsavík Academic Centre*, pages 54–60, 2019
22. **Angel Ruiz-Angulo**, Shahrzad Roshankhah, and Melany L. Hunt. Surface deformation and rebound for normal single-particle collisions in a surrounding fluid. *Journal of Fluid Mechanics*, 871:1044–1066, jun 2019
21. **Ruiz-Angulo, Angel**, Shahrzad Roshankhah, and Melany L. Hunt. Coefficient of restitution and dimensions of surface deformations for particle-wall collisions in various fluids: Dataset. *CaltechDATA*, 2018
20. Diego Melgar, **Angel Ruiz-Angulo**, Emmanuel Soliman Garcia, Marina Manea, Vlad. C. Manea, Xiaohua Xu, M. Teresa Ramirez-Herrera, Jorge Zavala-Hidalgo, Jianghui Geng, Nestor Corona, Xyoli Pérez-Campos, Enrique Cabral-Cano, and Leonardo Ramirez-Guzmán. Deep embrittlement and complete rupture of the lithosphere during the Mw 8.2 Tehuantepec earthquake. *Nature Geoscience*, 11(12):955–960, oct 2018
19. Diego Melgar and **Angel Ruiz-Angulo**. Long-Lived Tsunami Edge Waves and Shelf Resonance From the M8.2 Tehuantepec Earthquake. *Geophysical Research Letters*, nov 2018
18. Vala Hjörleifsdóttir, H. S. Sánchez-Reyes, **Angel Ruiz-Angulo**, Maria Teresa Ramírez-Herrera, Rocio Castillo-Aja, Shri Krishna Singh, and Chen Ji. Was the 9 October 1995 Mw 8 Jalisco, Mexico, Earthquake a Near-Trench Event? *Journal of Geophysical Research: Solid Earth*, 123(10):8907–8925, oct 2018
17. T. Meunier, E. Pallás-Sanz, M. Tenreiro, E. Portela, J. Ochoa, **A. Ruiz-Angulo**, and S. Cusí. The Vertical Structure of a Loop Current Eddy. *Journal of Geophysical Research: Oceans*, 123(9):6070–6090, sep 2018
16. Thomas Meunier, M. Tenreiro, Enric Pallàs-Sanz, Jose Ochoa, **Angel Ruiz-Angulo**, Esther Portela, Simò Cusí, Pierre Damien, and Xavier Carton. Intrathermocline Eddies Embedded Within an Anticyclonic Vortex Ring. *Geophysical Research Letters*, 45(15):7624–7633, aug 2018
15. Esther Portela, M. Tenreiro, Enric Pallàs-Sanz, Thomas Meunier, **Angel Ruiz-Angulo**, Rosmery Sosa-Gutiérrez, and Simó Cusí. Hydrography of the Central and Western Gulf of Mexico. *Journal of Geophysical Research: Oceans*, 123(8):5134–5149, aug 2018
14. M.T. Ramírez-Herrera, N. Corona, **Ruiz-Angulo, A.**, D. Melgar, and J. Zavala-Hidalgo. The 8 September 2017 Tsunami Triggered by the Mw8.2 Intraplate Earthquake, Chiapas, Mexico. *Pure and Applied Geophysics*, 175(1):25–34, 2018
13. B. Adriano, Y. Fujii, S. Koshimura, E. Mas, **Ruiz-Angulo, A.**, and M. Estrada. Tsunami Source Inversion Using Tide Gauge and DART Tsunami Waveforms of the 2017 Mw8.2 Mexico Earthquake. *Pure and Applied Geophysics*, 175(1):35–48, 2018
12. J.L. García-Franco, W. Stremme, A. Bezanilla, **Ruiz-Angulo, A.**, and M. Grutter. Variability of the Mixed-Layer Height Over Mexico City. *Boundary-Layer Meteorology*, pages 1–15, 2018
11. Nobuhito Mori, Ario Muhammad, Katsuichiro Goda, Tomohiro Yasuda, and **Ruiz-Angulo, Angel**. Probabilistic tsunami hazard analysis of the pacific coast of Mexico: Case study based on the 1995 Colima earthquake tsunami. *Frontiers in Built Environment*, 3:34, 2017

10. L. Díaz-Damacillo, **Ruiz-Angulo, A.**, and R. Zenit. Drift by air bubbles crossing an interface of a stratified medium at moderate Reynolds number. *International Journal of Multiphase Flow*, 85:258–266, 2016
9. **Ruiz-Angulo, A.** and J. Zavala-Hidalgo. Internal wave observations in the Petacalco canyon, México. *Environmental Science and Engineering (Subseries: Environmental Science)*, pages 203–213, 2016
8. **Ruiz-Angulo, A.** and E.D. López-Espinoza. Estimation of the thermal response of the lake basin of the Valley of Mexico in the 16th century: A numerical experiment. *Boletín de la Sociedad Geológica Mexicana*, 67(2):215–225, 2015
7. A.M. Thurnherr, E. Kunze, J.M. Toole, L. St. Laurent, K.J. Richards, and **Ruiz-Angulo, A.** Vertical kinetic energy and turbulent dissipation in the ocean. *Geophysical Research Letters*, 42(18):7639–7647, 2015
6. **Ruiz-Angulo, A.** Some aspects of turbulence role in oceanic currents. *Environmental Science and Engineering (Subseries: Environmental Science)*, Part F1:179–187, 2015
5. J.R. Pacheco, **Ruiz-Angulo, A.**, R. Zenit, and R. Verzicco. Fluid velocity fluctuations in a collision of a sphere with a wall. *Physics of Fluids*, 23(6), 2011
4. **Ruiz-Angulo, A.** and M.L. Hunt. Measurements of the coefficient of restitution for particle collisions with ductile surfaces in a liquid. *Granular Matter*, 12(2):185–191, 2010
3. N.M. Vriend, M.L. Hunt, R.W. Clayton, C.E. Brennen, K.S. Brantley, and **Ruiz-Angulo, A.** Reply to comment by B. Andreotti et al. on "Solving the mystery of booming sand dunes". *Geophysical Research Letters*, 35(8), 2008
2. N.M. Vriend, M.L. Hunt, R.W. Clayton, C.E. Brennen, K.S. Brantley, and **Ruiz-Angulo, A.** Solving the mystery of booming sand dunes. *Geophysical Research Letters*, 34(16), 2007
1. **Ruiz-Angulo, A.** and M.L. Hunt. Surface deformation in a liquid environment resulting from single-particle collisions. *AIChE Annual Meeting, Conference Proceedings*, 2006

## Academic Service

1. Referee for Journals: Journal of Geophysical Research (Earth and Oceans), Physics of Fluids, Atmosfera, Granular Matter
2. Referee for funding agencies: COST (Europe), CNACyT and PAPIIT (México)
3. Representative of CCA in the Academic Committee of the School of Earth Sciences (2013 – 2018)
4. Board member for the Faculty of Sciences Library (2013 – 2018)
5. Head of the Geophysical Fluid Dynamics Laboratory at the Centro de Ciencias de la Atmósfera (2014 – 2018)
6. Associate editor of the Mexican journal Atmósfera (2017 – 2018)
7. Member of the editorial advisory board of Boletín de la Sociedad Geológica Mexicana (2014 – 2017)
8. Secretary of the Academic Staff Society at Centro de Ciencias de la Atmósfera, COPACCA (2016–2018)
9. Representative for the National Laboratory of Oceanographic Vessels (LANBO)
10. Member of the sub-committee of admission to the graduate program in Earth Sciences
11. Member of the sub-committee of admission to the graduate program in Ocean Sciences

12. Member of the sub-committee of admission to the graduate program in Materials Sciences and Engineering

## Student Advise

- **Thesis director:**—2 doctoral (co-directing), 2 master and 4 undergraduate thesis. I have also co-supervised 2 postdoctoral researchers
- **Thesis committee service:**—member of 12 theses committees (undergraduate and graduate)
- **Mentor:**—7 undergraduate summer interns

## Research Experience

- **Selected projects—**
  - **CiGOM (Consortio de Investigación del Golfo de México)**  
Project url: <http://www.cigom.info>  
Principal Institution: CICESE (Centro de Investigación Científica y de Educación Superior de Ensenada). Activities:
    - \* Glider operations: oceanographic variables observations based on autonomous underwater vehicles (SeaGlider) to study meso and sub-mesoscale processes in the Gulf of Mexico (co-Pi).
    - \* LADCP/CTD LADCP/CTD (Lowered Acoustic Current Profiler/ Conductivity Temperature Depth) operations (participant).
  - **SATREPS: Hazard Assessment of Large Earthquakes and Tsunamis in the Mexican Pacific Coast for Disaster Mitigation.** Exploiting the science of slow earthquakes to mitigate disasters from megathrust earthquakes and tsunamis  
SATREPS (Science and Technology Research Partnership for Sustainable Development) project "ALERT G-GAP".  
Project url: [http://www.jst.go.jp/global/english/kadai/h2710\\_mexico.html](http://www.jst.go.jp/global/english/kadai/h2710_mexico.html)  
Principal Investigators: Yoshihiro ITO (Kyoto University) and Víctor M. CRUZ-ATIENZA (UNAM)  
Activities: Responsible (Mexican side) of the group B-2: tsunami modeling.
- **Disaster Prevention Research Institute, DPRI, Kyoto, Japan)—2016**
  - Visiting Researcher  
Project: Hazard Assessment of Large Earthquakes and Tsunamis in the Mexican Pacific Coasts for Disaster Mitigation SATREPS. Collaboration with Dr. Nobuhito Mori)
- **Laboratoire des Ecoulements Géophysiques et Industriels (LEGI)—2013**
  - Visiting Researcher  
Project: Planning the construction of a rotating tank for the Geophysical Fluid Dynamics Laboratory in the *Centro de Ciencias de la Atmósfera, UNAM*. Collaboration with Dr. Jan-Bert Flór.)

- **California Institute of Technology—2003-2008**

- Graduate Research Assistant, Granular Flows Group  
Project: Surface Deformation in Liquid Environment Resulting from Single-Particle Collisions  
Collaboration on the Project: Booming Sands  
(<http://www.pbs.org/wgbh/nova/sciencenow/3204/04-recipe.html>)

- **Research cruises—**

- R/V PointSur, ps1808, August-September 2017  
Project: GOMIX3 (Gulf of Mexico Mixing experiment).  
Chief Scientist: Kurt Polzin (WHOI)  
Institutions: Woods Hole Oceanographic Institution, Texas A&M University and Centro de Ciencias de la Atmósfera (UNAM).  
Activities: responsible of the VMP (Vertical Microstructure Profiler) and CTD (Conductivity Temperature Depth) tow-yo operations.
- R/V PointSur, ps1706, September 2016  
Project: GOMIX2 (Gulf of Mexico Mixing experiment).  
Chief Scientist: Steve DiMarco (Texas A&M) and Kurt Polzin (WHOI)  
Institutions: Woods Hole Oceanographic Institution, Texas A&M University and Centro de Ciencias de la Atmósfera (UNAM).  
Activities: responsible of the VMP (Vertical Microstructure Profiler) and CTD (Conductivity Temperature Depth) tow-yo operations.
- R/V Pelican, pe-14-05, July-August 2013  
Project: GISR (Gulf Integrated Spill Research Consortium).  
Chief Scientist: James R. Ledwell from Woods Hole Oceanographic Institution  
Institutions: Woods Hole Oceanographic Institution, Texas A&M University and Centro de Ciencias de la Atmósfera (UNAM).  
Activities: responsible of the LADCP/CTD (Lowered Acoustic Current Profiler/ Conductivity Temperature Depth) operations. Processing the LADCP/CTD data to obtain diffusivity parameters using fine-structure parameterization schemes and comparing those with the inferred estimations from the tracer experiment.

Project website: <http://www.tamu.edu/projects/LADDER/>

- B/O Justo Sierra, MARZEE-II, January-February 2011  
Project: MARZEE (Marco ambiental de las condiciones oceanográficas en el sector NW de la Zona Económica Exclusiva en el Golfo de México)  
Chief Scientist: Luis Arturo Soto González from Instituto de Ciencias del Mar y Limnología, UNAM  
Activities: responsible of the CTD and SADCP operations and data analysis. Duties as chief on the wet lab during the corresponding shifts. Establishing the regional hydrography and providing the data to colleagues, following the effort on monitoring the Mexican waters and seeking for possible oil contamination due to the BP oil spill.
- B/O Justo Sierra, MARZEE-I, June-July 2010

Project: MARZEE (Marco ambiental de las condiciones oceanográficas en el sector NW de la Zona Económica Exclusiva en el Golfo de México)

Chief Scientist: Luis Arturo Soto González from Instituto de Ciencias del Mar y Limnología, UNAM

Activities: responsible of the CTD and SADCOP operations and data analysis. Establishing the regional hydrography and providing the data to colleagues seeking for possible oil contamination due to the BP oil spill.

- R/V Thompson, US2, January-March 2010

Project: DIMES (Diapycnal and Isopycnal Mixing Experiment in the Southern Ocean).

Chief Scientist: James Ledwell from Woods Hole Oceanographic Institution

Activities: responsible of the LADCP/CTD (Lowered Acoustic Current Profiler/ Conductivity Temperature Depth) operations: deploying, recovering, data acquisition and data processing using the LDEO-IX software. Total number of stations: 150 with and average depth of 2000 [m]. Training and guiding master students on the LADCP/CTD operations to cover the 12 hours shifts during the cruise. Assisting on the deployment of acoustic sources moorings, shear meters, RAFO floats, XBT (eXpendable BathyThermograph), XCTD (eXpendable Conductivity-Temperature-Depth). Collaborating on the analysis of the preliminary results; comparing the turbulent parameters obtained with different LADCP/CTD finestructure parameterization and the microstructure direct measurements obtained with Deep Microstructure Profiler(DMP) and High Resolution Profiler (HRP).

Project website: <http://dimes.ucsd.edu/index.html>

- R/V Atlantis, atlantis-15-16, November-December 2007

Project: LADDER III (LArval Deep Dispersal on the East Pacific Rise).

Chief Scientist: Lauren Mullineaux from Woods Hole Oceanographic Institution

Activities: collaborating on the acquisition of LADCP/CTD data during the 50 stations planned for this cruise (average depth 2000 [m]). Tidal analysis using over a year long records of deep current meters recovered at the beginning of the cruise with the purpose of aiding on the planning of the repeated stations. Collaborating on the final report, elaborating the sections of LADCP/CTD and Tidal analysis.

Participation as an observer on the submersible ALVIN, immersion number AD4367.

Project website: <http://www.whoi.edu/projects/LADDER/>

- R/V Nathaniel B. Palmer (NBP0607C), NSF Grantee, October 2006

Project: Subtropical Front: Compilation of ADCP (Acoustic Doppler Current Profiler) and XBT (Expandable BathyThermograph) over the Chatham Rise, New Zealand.

Chief Scientist: Joann Stock from California Institute of Technology

- **Universidad Nacional Autónoma de México—2000-2002**

- Research Assistant, Materials Research Institute

Project: Velocity Field around a Sphere Colliding with a Wall, PIV (Particle Image Velocimetry) measurements.

- Research Assistant, CDM (Materials Design Center)



Project: Chamber of Accelerated Corrosion.

## Invited Talks

1. **Tracing the dispersion of the Coatzacoalcos river plume in the Gulf of Mexico: a numerical experiment.**— Department of Physical Oceanography, CICESE. Ensenada, Mexico (February 2020).
2. **Monitoreo de remolinos anticiclónicos en el Golfo de México con gliders.**—Seminario del Centro de Ciencias de la Atmósfera y de El Colegio Nacional, CCA-UNAM, Mexico (April 2018).
3. **Simulación de tsunamis y escenarios de inundación en las costas de Guerrero. Día mundial concienciación sobre tsunamis.**—World Tsunami Awareness Day, Zihuatanejo, Mexico (November 2017)
4. **Corrientes de gravedad y su contribución en la mezcla de masas de aire en la atmósfera.**—II Escuela de Verano en Ciencias de la Atmósfera, UNAM Campus Juriquilla. (June 2017)
5. **Flujos burbujeantes en medios estratificados: un estudio experimental.**—Laboratorio de Ingeniería y Procesos Costeros, Sisal, Yucatan, Mexico (January 2017)
6. **¿Qué nos queda de nuestro gran lago de Texcoco? Las consecuencias en el microclima urbano del Valle de México.**—CCH Sur, UNAM, Mexico (April, 2016).
7. **¿Cómo medimos las variables oceánicas y cuál es la importancia de la circulación oceánica?**—Introducción a Ciencias de la Tierra, Bloque de Ciencias Acuáticas, UNAM, Mexico (October 2015).
8. **Érase una vez un lago: La respuesta térmica asociada a la extinción de la cuenca lacustre del Valle de México.**—Seminario del Centro de Ciencias de la Atmósfera y de El Colegio Nacional, CCA-UNAM, Mexico (October 2015).
9. **Challenges implementing ADCIRC operationally, the story of unstructured meshes. Icelandic Meteorological Office (Vedurstofa Íslands), Iceland (June, 2014).**—
10. **Ondas espectaculares en la atmósfera y el océano**—Miércoles de divulgación, CCA-UNAM, Mexico (April, 2014).
11. **Dinámica de Fluidos Geofísicos y sus aplicaciones.**—Encuentro de Jóvenes Investigadores en Ciencias de la Tierra 2013. Instituto de Geología e Instituto de Geofísica, UNAM, Mexico (December 2013).
12. **Estimaciones de parámetros turbulentos en el Océano y su importancia en los modelos climáticos.**—Facultad de Ciencias, UNAM, Mexico (November 2013).

13. **Turbulencia y ondas internas en la atmósfera y el océano: El caso del Caón de Petacalco.**—Seminario del Centro de Ciencias de la Atmósfera y de El Colegio Nacional, CCA-UNAM, Mexico (October 2013).
14. **Internal wave Observations in the Petacalco canyon, México**—Invited seminar at Laboratoire des Ecoulements Géophysiques et Industriels (LEGI) in Grenoble, France (June 2013).
15. **Turbulencia en corrientes marinas y rompimiento de ondas internas ( *turbulence in oceanic currents and internal waves breakage* )** — Seminario invitado, Instituto de Ingeniería, UNAM campus Mérida (Junio 2012).
16. **Turbulencia en corrientes marinas (*turbulence in oceanic currents*)**— Seminario Enzo Levi, División de Dinámica de Fluidos (Mayo, 2012)
17. **Surface Deformation in a Liquid Environment Resulting from Single Particle Collisions, and my story from the bottom of the Ocean** — Instituto de Investigación en Materiales, UNAM (May, 2009)

## Conferences

- **OS MEETING 2020.**—San Diego, California, USA (February, 2020)
  - **ADCP's on gliders: features and applications.**  
Miguel Costa Tenreiro, Enric Pallas Sanz, Marco Julio Ulloa, Jose Ochoa, Thomas Meunier, **Angel Ruiz Angulo**, Julio Sheinbaum, Julio Candela, Simó Cusí and Sebastian Cisneros.
  - **Tracing the dispersion of the Coatzacoalcos river plume in the Gulf of Mexico: a numerical experiment.** **Ruiz-Angulo, A.**, Moreno, J. M., Ramos-Musalem, K., Olvera-Prado, E. R., Zavala-Hidalgo, J.
  - **Gliders observations of mesoscale and submesoscale flow structures in the Gulf of Mexico: over three years of continuous monitoring.**  
Enric Pallas Sanz, Miguel Costa Tenreiro, Thomas Meunier, Esther Portela, Elva Rosmery Sosa Gutiérrez, Marco Julio Ulloa, Jose Ochoa, **Angel Ruiz Angulo**, Simó Cusí, Eliot Aranda, Adrián Villicana.
  - **Warm-Core Rings Heat Content and Transfers in the Gulf of Mexico**  
Thomas Meunier, Enric Pallas Sanz, **Angel Ruiz Angulo**, Miguel Costa Tenreiro, Jose Ochoa, Julio Sheinbaum, Simó Cusí, Xavier J Carton, Charly de Marez, Christian E Buckingham.
- **EGU 2020**—Virtual conference (May, 2020)
  - The Arrested Ekman Layer Escapes! Ventilation of the BBL by Internal Swash.**  
K Polzin, Z Wang, B Wang, **A Ruiz Angulo.**

- **OS MEETING 2018.**—Portland, Oregon, USA (February, 2018)

- **Turbulence over the Northern Gulf of Mexico Continental Slope.**

Kurt L Polzin, Steven Francis DiMarco, Zhankun Wang, Angel Ruiz-Angulo, Miguel Costa Tenreiro, Christian Nygren.

- **Deep Chlorophyll Maximum Oscillations During the Life of the Anticyclonic Loop Current Eddy Poseidon.**

Enric Pallas Sanz, Miguel Costa Tenreiro, Thomas Meunier, Esther Portela, Jose Ochoa, Angel Ruiz-Angulo, Marco Julio Ulloa, Simó Cusí.

- **The Vertical Structure of a Loop Current Eddy : from Mesoscale to Fine Scale.**

Thomas Meunier, Enric Pallas Sanz, Miguel Costa Tenreiro, Jose Ochoa, **Angel Ruiz Angulo**, Esther Portela, Simó Cusí, Xavier J Carton.

- **Topographic Enhancement of Diapycnal Diffusivity on the Continental Slope in the Northern Gulf of Mexico and Its Application to the Oil Droplet Dynamics.**

Zhankun Wang, Kurt L Polzin, Steven Francis DiMarco, John Toole, Angel-Ruiz Angulo, Miguel Costa Tenreiro, Binbin Wang, Christian Nygren.

- **Benthic Frontogenesis, Production of Negative Potential Vorticity and Turbulence over the Northern Gulf of Mexico Continental Slope**

Kurt L Polzin, Steven Francis DiMarco, Zhankun Wang, Binbin Wang, **Angel Ruiz Angulo**, Miguel Costa Tenreiro, Christian Nygren.

- **AGU FALL MEETING 2017.**—New Orleans, USA (December 2017)

- **Long-lived tsunami edge-waves within the Tehuantepec Gulf triggered by the Mw8. 2 Tehuantepec earthquake.**

**A Ruiz-Angulo**, D Melgar, E Garcia, M Manea, VC Manea, MT Ramirez-Herrera, J Zavala-Hidalgo, J Geng, N Corona, X Perez-Campos, E Cabral-Cano.

- **Ventilation potential during the emissions survey in Toluca Valley, Mexico.**

**A Ruiz-Angulo**, O Peralta, OE Jurado, A Ortinez, M Grutter de la Mora, C Rivera, W Gutierrez, E Gonzalez.

- **Analysis of the Source and Ground Motions from the 2017 M8. 2 Tehuantepec and M7. 1 Puebla Earthquakes.**

D Melgar, VJ Sahakian, X Perez-Campos, L Quintanar, L Ramirez-Guzman, Z Spica, VH Espindola, **A Ruiz-Angulo**, E Cabral-Cano, A Baltay, J Geng.

- **RAUGM, 2017**—Puerto Vallarta, México (November, 2017)

- **Estimación de Coeficientes de Disipación Turbulenta Dentro y Fuera de Los Remolinos de Mesoescala en el Golfo de México.**

**Angel Ruiz-Angulo**, Enric Palls-Sanz, Miguel Tenreiro, Thomas Meunier, Esther Portela, José Ochoa, Marco Ulloa, Simó Cusí, Elliot Aranda.

- **Operation, Maintenance and Management of an Underwater Glider Fleet.**  
Simó Cusí, Palls-Sanz Enric, Miguel Tenreiro, Eliot Aranda, Jose Luis Ochoa, Jessica Zarate, Adrian Villacana, Carlos Cabrera, Isabel Andrade, Marco Ulloa, **Angel Ruiz-Angulo**, Alan López, Tomás Salgado, Luís Govinda, Luciano Nava, Jose Luís Sanchez.
- **Observación de Plumas de Agua Dulce en el Golfo de México con Planeadores Submarinos.**  
Miguel Tenreiro, Enric Palls-Sanz, Esther Portela, Thomas Meunier, José Luis Ochoa de La Torre, Angel Ruíz Angulo, Marco Julio Ulloa, Simó Cusí.
- **Distribución Temporal y Espacial de Clorofila en Remolinos de la Corriente del Lazo.**  
Enric Palls Sanz, Miguel Tenreiro, Thomas Meunier, Esther Portela, Jose Luís Ochoa, **Angel Ruiz-Angulo**, Marco Ulloa, Simó Cusí, Eliot Aranda.
- **Condiciones Termohalinas y de Circulación en la Plataforma de Yucatán.**  
Ismael Mario Tapia, Cecilia Enriquez, Alejandro Souza Gómez, **Angel Ruiz Angulo**.
- **Condiciones Termohalinas y de Circulación en el Polígono Perdido.**  
Cecilia Enríquez Ortiz, Ismael Mario Tapia, Rafael Meza , **Angel Ruiz Angulo**, Christian Appendini.
- **Coefficiente de Ventilación Derivado A Partir del Nuevo Perfilador de Vientos de la Ruoa: Implicaciones en la Calidad del Aire en la Ciudad de México.**  
**Angel Ruiz-Angulo**, Carlos Ochoa, Adolfo Magaldi, Arturo Quintanar, Michel Grutter, Olmo Zavala, Benjamín Martínez, Jorge L. García-Franco, M. Eugenia González, Claudio Pierard.
- **Estudio de la Capa Límite Atmosférica Sobre La Ciudad de México en época de Inversiones.**  
Andrea Burgos Cuevas, Claudio Marcelo Pierard Manzano, Jorge Luis García Franco , Michel Grutter de la Mora, **Angel Ruiz Angulo**, Alejandro Bezanilla Morlot.
- **Estudio Numérico del Nuevo Lago de Chalco y Su Impacto en el Tiempo Meteorológico de la Región.**  
Alejandro Jair García Jiménez , Erika Danae López Espinoza, Jorge Zavala Hidalgo, **Angel Ruiz Angulo**, Octavio Gómez Ramos, Ma. Carmen Calderon Ezquerro.
- **Análisis del Impacto del Cambio de Cobertura de Suelo Para el ao 1807 en la Cuenca de México Empleando Modelación Numérica.**  
Alejandra Labrada Santana, Erika Danaé López Espinoza, Jorge Zavala Hidalgo, **Angel Ruiz Angulo**, Octavio Gómez Ramos, Ma. Carmen Calderon Ezquerro.
- **Estudio Numérico de Una Propuesta de Reforestación Para el Centro de México y Sus Implicaciones en la Meteorología Regional.**  
Gisell Hernandez Vargas, Erika Danaé López Espinoza, Ma. Carmen Calderon Ezquerro, Jorge Zavala Hidalgo, **Angel Ruiz Angulo**, Octavio Gómez Ramos.
- **Descripción y Aplicaciones de Un LIDAR, Perfilador de Vientos Como Parte de la Ruoa.**  
Michel Grutter, Arturo Quintanar, Carlos Abraham Ochoa, Benjamín Martínez, Olmo Zavala, Angel Ruiz- Angulo, Adolfo Magaldi.

- **CiGOM 2017.**—CICESE, Ensenada, BC., México (April 2017)
  - **Subproyecto 3: Gestión, operación, y mantenimiento de una flota de gliders**  
Cusí S., Cabrera C., Aranda E., I. Andrade, E. Palls-Sanz, M. Tenreiro, M. Ulloa, A. Ruíz-Angulo, J. Ochoa, T. Salgado, L. Govinda, L. Nava, y J. Sánchez
  - **Comparación de perfiles de velocidad estimados a partir de estaciones CTD y mediciones directas de LADCP en el Golfo de México**  
**Angel Ruiz-Angulo**, Joaquín García, José Luis Ochoa y Julio Sheinbaum.Ê
  - **Condiciones Termohalinas y de Circulación en la Plataforma de Yucatán**  
Ismael Mario Tapia, Cecilia Enriquez, Alejandro Souza Gómez, **Angel Ruiz Angulo**.Ê
  - **Condiciones Termohalinas y de Circulación en el Polígono Perdido**  
Cecilia Enríquez Ortiz, Ismael Mario Tapia, Rafael Meza , **Angel Ruiz Angulo**, Christian Appendini.
  
- **EGU 2017**—Vienna, Austria (April, 2017)
  - Applications for mid-range forecasts - Simulations of storm surges**  
Oscar Jurado, Ólafur Rögnvaldsson, **Angel Ruiz-Angulo (CCA-UNAM)**.
  
- **Gulf of Mexico Oil Spill and Ecosystem Science Conference**—New Orleans, Louisiana, USA (February, 2017)
  - Boundary Mixing along the Northern Deep Water Gulf**  
Kurt Polzin (WHOI), Zhankun Wang (TAMU), **Angel Ruiz-Angulo (CCA-UNAM)**, John Toole (WHOI), Steve DiMarco (TAMU).
  
- **APS/DFD 2016** —Portland, Oregon USA (Noviembre, 2016)
  - Experimental Gravity Currents Propagating Downslope Over A Synthetic Topography**  
Andrea Burgos-Cuevas (CCA-UNAM), **Angel Ruiz-Angulo (CCA-UNAM)**, Carlos Palacios-Moreales (FI-UNAM).
  
- **RAUGM, 2016**—Puerto Vallarta, México (November, 2016)
  - **Overview Of The Satreps Tsunami Modeling Group: Comprehensive Tsunami Hazard Assessment Of The Mexican Pacific Coast**  
**Ruiz-Angulo Angel**, Mori Nobuhito , Goda Katsuichiro , Yasuda Tomohiro , Baba Toshitaka , Koshimura Shunichi , Mas Erick , Urra Luisa , Adriano Bruno, Zavala-Hidalgo Jorge , Hjorleifsdottir Vala , Ito Yoshihiro y Cruz-Atienza Víctor Manuel.
  - **On The Climate Consequences Of Drying The Former System Of Lakes In The Basin Of Mexico City**  
**Ruiz-Angulo Angel**, López Espinoza Erika Danaé, Zavala-Hidalgo Jorge y Romero Centeno Rosario.Ê
  - **Grupo De Monitoreo Oceanográfico Con Gliders (GMOG).**  
Pallàs Sanz Enric, Tenreiro Miguel, **Ruiz-Angulo Angel**, Ochoa José Luis, Ulloa Marco Julio, Salgado Jiménez Tomás, Sánchez Gaytán José Luis , Nava Balanzar Luciano,

Govinda Garcia Luís, Cusí Simó, Cabrera Carlos, Aranda Eliot, Andrade Isabel y Meunier Thomas.Ê

– **Monitoreo De Estructuras De Mesoescala En El Golfo De México Ð El Caso ÒOlympus DecadenteÓ (GMOG).**

Tenreiro Miguel, Pallàs Sanz Enric, Ochoa José Luis, **Ruiz-Angulo Angel**, Ulloa Marco Julio, Cusí Simó y Cabrera Carlos.

• **OS (Ocean Sciences), 2016** —New Orleans, Louisiana, USA (February, 2016)

**Boundary mixing along the Northern Deep Water Gulf of Mexico**

**Angel Ruiz-Angulo (CCA-UNAM)**, Andrea Costa (MIO/U. Marseille), Steve DiMarco (TAMU), Jim Ledwell (WHOI), Kurt Polzin (WHOI), Zhankun Wang (TAMU)

• **RAUGM, 2015**—Puerto Vallarta, México (November, 2015)

– **Modelación numérica operativa en el grupo Interacción Océano-Atmósfera del CCA UNAM**

Gómez-Ramos Octavio, Zavala-Hidalgo Jorge, Romero-Centeno Rosario, López-Espinoza Erika Danaé, **Ruiz-Angulo Angel**, Díaz García Ovel, Arellano Guerrero Fernando Nicolás, Osorio-Tai María Elena, Herrera Moro Rosario, Magarios-Lamas Fernando

– **Validación del pronóstico meteorológico operativo del CCA-UNAM para el centro de México**

López Espinoza Erika Danaé, Zavala-Hidalgo Jorge, Gómez Ramos Octavio, Romero Centeno Rosario, **Ruiz Angulo Angel**

– **Corrientes de gravedad en el valle de México: un estudio experimental**

Burgos Cuevas Andrea, Garduo Ruiz Daniel Iván, Ruiz Angulo Angel, Palacios Morales Carlos Alberto

– **Tsunami modeling of the Jalisco 1995 Earthquake, based on finite fault seismic source models**

**Ruiz Angulo Angel**, Hjörleifsdóttir Vala, Sánchez Reyes Samuel, Zavala-Hidalgo Jorge.

– **Mejorando el pronóstico de mareas de tormenta mediante el uso de nuevos y mas potentes métodos de modelación global**

Jurado de Larios Oscar Esli, González Arteaga Héctor Miguel, Dóaz García Ovel, Zavala Hidalgo Jorge, **Ruiz Angulo Angel**, López Espinoza Erika Danaé

• **OS (Ocean Sciences), 2014** —Honolulu, Hawaii, USA (February, 2014)

– **Observed and modeled internal waves in the Petacalco canyon, México.**

**Ruiz-Angulo, A**, Zavala-Hidalgo, J., Zamudio, L., Osorio-Tai, M. E.

– **A numerical study of the Yucatán upwelling processes**

Ramos-Musalem, A. K, Zavala-Hidalgo, J, **Ruiz-Angulo, A.**

• **RAUGM, 2014**—Puerto Vallarta, México (November, 2014)

– **Tsunami modeling of recent earthquakes in Mexico**

Angel Ruiz-Angulo, Vala Hjörleifsdóttir.

- **El Tiempo Meteorológico en la época prehispánica: el impacto de la cuenca lacustre en el Valle de México**  
Angel Ruiz-Angulo, Erika D. López-Espinoza.
- **Validación de un sistema de pronóstico numérico operativo de oleaje y marea de tormenta para mares y costas de México**  
Gómez-Ramos O., Zavala-Hidalgo J., López-Espinoza E.D., Romero-Centeno R., **Ruiz-Angulo A.**, Osorio-Tai M. E., Díaz-García O., Contreras Ruiz-Esparza A., Olvera-Prado E., Magariños-Lamas F.
- **AGU Meeting of the Americas** — Cancún, México (May, 2013)
  - A numerical study of the Yucatan upwelling processes (Talk).**  
A. Ramos-Musalem, J. Zavala-Hidalgo, **A. Ruiz-Angulo**.
- **RAUGM, 2013**—Puerto Vallarta, México (November, 2013)
  - **La dinámica de la capa de mezcla sobre la Ciudad de México medido por un LIDAR**  
**Angel Ruiz-Angulo**, Wolfgang Stremme, Alejandro Bezanilla, Michel Grutter de la Mora
  - **Wind Wave and Storm Surge Numerical Forecasting System for the Mexican Seas and Coasts**  
Jorge Zavala-Hidalgo, Octavio Gómez-Ramos, Erika Danaé López-Espinoza, Fernando Magariños-Lamas, Erick Raúl Olvera-Prado, Ma. Elena Osorio-Tai, Rosario Romero-Centeno, Ovel Díaz-García, Adolfo Contreras Ruiz-Esparza, and **Angel Ruiz-Angulo**
  - **Difusión turbulenta del Golfo de México**  
Luz A. Zárate Jiménez, **Angel Ruiz-Angulo**, Jim Ledwell, Daniel Torres.
- **APS/DFD, 2013**—American Physical Society Division of Fluid Dynamics, APS/DFD 2013 Pittsburgh, USA (November 2013)
  - **The swimming mechanics of Artemia Salina**  
**A. Ruiz-Angulo**, A.K. Ramos-Musalem, C. Palacios-Morales, R. Zenit
  - **Mixing and drift by air bubbles crossing an interface of a stratified medium**  
L. Diaz-Damacillo, **A. Ruiz-Angulo**, R. Zenit
- **International DIMES Meeting, WHOI** —Woodshole, MA (Nov, 2012)
  - Validation of CTD/LADCP Based Turbulence and Mixing Finestructure Parameterization Methods.**  
A.M. Thurnherr, **A. Ruiz-Angulo**, and X. Liang.
- **APS/DFD** — San Diego, CA (Nov, 2012)
  - Internal waves in the Petacalco canyon, Mexico (Talk).**  
**Angel Ruiz-Angulo** and Jorge Zavala-Hidalgo.
- **UGM (Unión de Geofísica Mexicana)** — Puerto Vallarta, México (November, 2012)

**Condiciones de rompimiento de ondas internas en el caón de Petacalco (Talk).**

**A. Ruiz-Angulo, J. Zavala-Hidalgo.**

**Estudio de los forzamientos que generan la surgencia de Yucatán usando un modelo no-hidrostático. (Talk).**

**A. Ruiz-Angulo, J. Zavala-Hidalgo.**

- **CIP (Center for International Policy)—New Orleans, LA (April, 2012)**

**U.S.-Cuba-Mexican Association to Defend Against Hurricanes**

**A. Ruiz-Angulo overall conference comentator.**

- **OS (Ocean Sciences) — Salt Lake City, UT (February, 2012)**

**Observed upwelling events in the Petacalco canyon**

**A. Ruiz-Angulo and J. Zavala-Hidalgo**

- **AGU — San Francisco, CA (December, 2011)**

**Observations of upwelling events in the Petacalco submarine canyon (Poster).**

**A. Ruiz-Angulo, J. Zavala-Hidalgo**

- **UGM (Unión de Geofísica Mexicana) — Puerto Vallarta, México (November, 2011)**

**Observaciones de eventos de surgencia en el caón submarino de Petacalco (Talk).**

**A. Ruiz-Angulo, J. Zavala-Hidalgo.**

**Monitoreo de las condiciones oceanográficas en el NW del Golfo de México ante el derrame de petróleo de Luisiana, E.U.A. (poster).**

**Luis A. Soto, Jorge Zavala, Martín Merino, Laura Sanvicente, Sergio Licea, Alma Sobrino, Alfonso Vázquez Botello, A. Ruiz-Angulo.**

- **MOCA-09 — Montréal, CA (July, 2009)**

**Direct comparison of Finestructure Parameterization with Microstructure**

**A. Ruiz-Angulo, A. M. Thurnherr, L.C. St. Laurent (Poster).**

**Diapycnal Mixing on the East Pacific Rise near 10N**

**A. M. Thurnherr, L.C. St. Laurent, A. Ruiz-Angulo.**

- **APS/DFD — Tampa, Fl (November, 2006)**

**Surface Deformation in a Liquid Environment Resulting from Single-Particle Collisions**

**Angel Ruiz-Angulo, Melany L. Hunt**

- **AIChE, Fifth World Congress on Particle Technology — Orlando, Fl (April, 2006)**

**Surface Deformation in a Liquid Environment Resulting from Single-Particle Collisions**

**Angel Ruiz-Angulo, Melany L. Hunt**

- **FLUID-PARTICLE INTERACTIONS VI — Tuscany, Italy (August, 2002)**



**The Evolution of the Velocity Field around a Sphere Colliding with a Wall**  
Roberto Zenit, Angel Ruiz-Angulo (Poster)

## Workshops

- **PASI – 2013 (Pan-American Advanced Studies Institute)** — Valparaiso, Chile (Jan, 2013)  
**The science of predicting and understanding tsunamis, storm surges and tidal phenomena**  
Director: Dr. Lorena Barba, Boston University.
- **ERCA – 2012** — Grenoble, France (Jan, 2012)  
**European Research Courses on Atmospheres**  
Director: Dr. Claude Brouton.
- **The Ocean-Atmosphere Energy Transport Conference – 2009** — Caltech, CA (Nov, 2009)  
**Ocean-Atmosphere Interactions**  
Organizers: Raffaele Ferrari (Massachusetts Institute of Technology)  
Tapio Schneider (California Institute of Technology)  
Nora Oshima (California Institute of Technology)

## Languages

- First Language: Spanish
- Second Language: English (fluent), Icelandic (50 %)

## Awards and Activities

- PASI-2013 Fellowship. Pan-American Advanced Studies Institute, Valparaiso, Chile (Jan, 2013).
- Fellowship: European Research Courses on Atmospheres. January-February 2012.
- Investigador Nacional (SNI), I. Starting on January 2018.
- Outstanding Service International Student Program, 2008 (Caltech).
- Fellowship: Woods Hole Oceanographic Institution Summer School in Geophysical Fluid Dynamics. Summer 2007.
- Gabino Barreda Medal recipient, for highest GPA in the Mechanical Engineering Class of 1997, Facultad de Ingeniería, UNAM.
- Received the ANFEI (Asociación Nacional de Facultades y Escuelas de Ingeniería) award (2001), given to the most outstanding engineering students in Mexico.
- Scholarship for Undergraduate Studies, CONACYT and SEDESOL, Mexico.
- Scholarship for Undergraduate Studies, TELMEX Foundation, Mexico.
- Vice-president of the *Club Latino* at Caltech.