

Ivonne Mariela García Martínez, Ph.D.

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Education

- 2016 – 2020 **Ph.D. Atmospheric and Environmental Sciences.** The University of Edinburgh. Edinburgh, UK.
Thesis title: *Mechanisms of climate variation in the broader Mexican-United States region: the role of atmospheric circulation and anthropogenic forcing.*
- 2012 – 2015 **M.Sc. Physical Oceanography.** Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE). Ensenada, Mexico.
Thesis title: *Ocean-atmosphere variability related with the midsummer drought in the CFSR reanalysis.*
- 2007 – 2011 **B.Sc. Atmospheric Sciences.** Universidad Veracruzana. Xalapa, Mexico.
Graduated by high GPA.

Research Publications

Peer-reviewed articles

- 1 L. Zavala Sansón, **I. M. García-Martínez**, and J. Sheinbaum Pardo, “Nonlinear surface Ekman effects on cyclonic and anticyclonic vortices,” *Journal of Fluid Mechanics*, 2023, In press.
- 2 **I. M. García-Martínez** and M. A. Bollasina, “Identifying the evolving human imprint on heat wave trends over the United States and Mexico,” *Environmental Research Letters*, vol. 16, no. 9, p. 094 039, 2021. [DOI: 10.1088/1748-9326/ac1edb](https://doi.org/10.1088/1748-9326/ac1edb).
- 3 **I. M. García-Martínez**, M. A. Bollasina, and S. Undorf, “Strong large-scale climate response to North American sulphate aerosols in CESM,” *Environmental Research Letters*, vol. 15, no. 11, p. 114 051, 2020. [DOI: 10.1088/1748-9326/abbe45](https://doi.org/10.1088/1748-9326/abbe45).
- 4 **I. M. García-Martínez** and M. A. Bollasina, “Sub-monthly evolution of the Caribbean Low-Level Jet and its relationship with regional precipitation and atmospheric circulation,” *Climate Dynamics*, vol. 54, pp. 4423–4440, 2020. [DOI: 10.1007/s00382-020-05237-y](https://doi.org/10.1007/s00382-020-05237-y).

Book chapters

- 1 A. Tejeda Martínez, D. R. Fitzjarrald, M. Pérez Méndez, *et al.*, “Ciclos diurnos y circulación local (Diurnal cycles and local circulation),” in *Un laboratorio natural del clima: la interacción costa-montaña en el centro del Golfo de México*, A. Tejeda Martínez, M. Pérez Méndez, and I. R. Méndez Pérez, Eds., Xalapa, México: Universidad Veracruzana, 2020, pp. 46–91.
- 2 A. Tejeda Martínez, **I. M. García-Martínez**, G. Gómez-Azpeitia, I. R. Méndez-Pérez, and P. J. González Viveros, “Procedimientos simples para la estimación de radiación Solar en México (Simple procedures for the estimation of solar radiation in Mexico),” in *Prontuario solar de México*, G. Gómez-Azpeitia and A. Tejeda Martínez, Eds., Colima, México: Universidad de Colima and Universidad Veracruzana, 2015, pp. 103–112.

- 3 A. Tejada Martínez, **I. M. Garcia-Martínez**, I. R. Méndez-Pérez, U. Miranda-Miranda, and J. V. López-Méndez, “Radiación solar en México (Solar radiation in Mexico),” in *Prontuario solar de México*, G. Gómez-Azpeitia and A. Tejada Martínez, Eds., Colima, México: Universidad de Colima and Universidad Veracruzana, 2015, pp. 51–68.




Manuscripts in submission and in preparation

- 1 **I. M. Garcia-Martínez** and M. A. Bollasina, “Projected compound hot and dry events over Mexico in HighResMIP GCMs,” In preparation. To be submitted to Weather and Climate Extremes.
- 2 **I. M. Garcia-Martínez** and J. Sheinbaum Pardo, “Current feedback in an anticyclonic eddy during the passage of cold frontal systems over the Gulf of Mexico,” In preparation. To be submitted to Journal of Physical Oceanography.




Manuscript reviews

- Climate Dynamics
- International Journal of Climatology

Awarded scholarships

- 2016 – 2020  **PhD Scholarship from the National Council for Science and Technology (CONA-CyT, Mexico).**
- 2012 – 2014  **Complementary PhD scholarship from the University of Edinburgh, UK.**
- 2012 – 2014  **MSc Scholarship from the National Council for Science and Technology (CONA-CyT, Mexico).**






Academic employment

- 2021 –  **Postdoctoral Researcher, Department of Physical Oceanography.** Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE). Ensenada, México.
- 2015 – 2016  **Research Assistant, Department of Physical Oceanography.** Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE). Ensenada, México.
- 2011 – 2012  **Research Assistant, Applied Climatology Group.** Universidad Veracruzana. Xalapa, México.



Research visits

- 2022 –  **Remote visiting researcher, School of GeoSciences.** The University of Edinburgh. Edinburgh, UK.


Related professional and technical skills

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|-----------------|--|
| Languages |  Strong reading, writing and speaking skills in English. Native Spanish and basic Portuguese. |
| Coding |  Python, Matlab, shell, NCO, CDO, GrADS, and high performance computing |
| Modelling |  WRF (atmospheric model), NEMO (ocean model) |
| Version control |  Git |
| Editing |  L ^A T _E X |








Teaching experience

- 2022  **Climatology and Climate Change.** Postgraduate program in Physical Oceanography. Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE). Ensenada, México. Lecturer.
- 2016 – 2018  **Earth Modelling and Prediction.** School of GeoSciences. The University of Edinburgh. Edinburgh, UK. Teaching assistant.

Invited talks

- 2022  **Weather of 2021 in the Context of the Long-Term Climate Change.** "Understanding the Weather of 2021" virtual event of the Royal Meteorological Society of the UK. 26 February 2022. <https://www.rmets.org/event/virtual-understanding-weather-2021>

Participation in conferences and other academic activities

-  European Geosciences Union (EGU) General Assembly. Vienna, Austria, April 23-28, 2023. Current feedback in an anticyclonic eddy during the passage of cold frontal systems over the Gulf of Mexico. **García-Martínez I. M.** and J. Sheinbaum. Poster.
-  Annual Meeting of the Mexican Geophysical Union (UGM). Vallarta, Mexico, 30 October to November 4, 2022. Heat wave trends in Mexico and the United States: contribution from anthropogenic aerosols, greenhouse gases and internal variability. **García-Martínez, I. M.** and M. Bolasina. Oral presentation.
-  World Climate Research Program (WCRP) virtual workshop on attribution of multiannual to decadal changes in the climate system. September 22-24, 2021. Identifying the evolving human imprint on heat wave trends over Mexico and the United States. **García-Martínez, I. M.** and M. Bolasina. Oral presentation.
-  Annual Meeting of the Mexican Geophysical Union (UGM). Vallarta, Mexico, November 2-8, 2019. Evolución sub-mensual del jet de bajo nivel del Caribe y su relación con la precipitación en México. **García-Martínez, I. M.** and M. Bolasina. Oral presentation.
-  Annual Meeting of the Mexican Geophysical Union (UGM). Vallarta, Mexico, November 2-8, 2019. Aerosoles antropogénicos de Norteamérica como modificadores del clima mexicano. **García-Martínez, I. M.** and M. Bolasina. Poster.
-  European Geosciences Union (EGU) General Assembly. Vienna, Austria, 7–12 April 2019. Anthropogenic aerosols as drivers of Mexican and Central American climate. **García-Martínez I. M.** and M. Bolasina. Poster.
-  **ICTP Summer School** on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics: Multiple Equilibria in the Climate System. Trieste, Italy, 25 June- 5 July 2018. At International Center for Theoretical Physics.

Participation in conferences and other academic activities (continued)

- European Geosciences Union (**EGU**) General Assembly. Vienna, Austria, April 8-13, 2018. Sub-monthly variability of the Caribbean Low-Level Jet and its relationship to precipitation and atmospheric circulation in Mexico and Central America. **García-Martínez I. M.** and M. Bolasina. Poster.
- **GOTHAM Summer School:** Global Teleconnections in the Earth's Climate System – Processes, Modelling and Advanced Analysis Methods. Potsdam, Germany, 18-22 September 2017. At Potsdam Institute for Climate Impact Research.
- Virtual workshop of the Climate Variability and Predictability Program (**US CLIVAR**): Observing and Modelling Climate Variability in the Intra-Americas Seas and Impacts on the Continental Americas and the Caribbean. September 9-11, 2015. Ocean-atmosphere variability related with the midsummer drought in the CFSR reanalysis. **García-Martínez, I. M.** and J. Sheinbaum. Poster.
- Annual Meeting of the Mexican Geophysical Union (**UGM**). Vallarta, Mexico, November 2-8, 2014. Variabilidad Océano-atmósfera asociada a la sequía intraestival en el reanálisis CFSR (Ocean-atmosphere variability related with the midsummer drought in the CFSR reanalysis). **García-Martínez, I. M.** and J. Sheinbaum. Oral presentation.
- **XXII Alpine Summer School.** Dynamics, Stochastics and Predictability of the Climate System. Valsavarenche, Valle d'Aosta, Italy, June 9-18, 2014.
- Annual Meeting of the Mexican Geophysical Union (**UGM**). Vallarta, Mexico, October 28-November 2, 2012. Modelo Empírico para la estimación de la radiación difusa horaria en condiciones despejadas para la ciudad de Xalapa (Empirical model for the estimation of the hourly diffuse radiation during clear-sky conditions in Xalapa city). López-Velázquez, E. and **García-Martínez I. M.** Poster.
- **XVI Congresso Brasileiro de Meteorologia.** Belém do Pará, Brazil. September 13-17, 2010. Análisis de la temperatura mínima registrada en la temporada invernal 2009-2010 en la región X Golfo Centro, México (Analysis of the minimum temperature in the 2009-2010 Winter season for the Central Mexico region). **García-Martínez, I. M.**, Gómez, G., González, P., Jofre, R., Muñoz C., and Nava, R. Oral presentation.