

# TOMÁS L. CHOR

Personal page: [tomchor.github.io](http://tomchor.github.io)

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## ABOUT ME

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I am a PhD candidate at UCLA investigating material transport in the Oceanic Mixed Layer who is very interested in small scale geophysical turbulence in general (both in the ocean and atmosphere) and numerical modelling. I'm also enthusiastic about programming and open-source initiatives.

## EDUCATION

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*Ph.D.* Atmospheric and Oceanic Sciences  
University of California, Los Angeles Expected in 2020  
Investigating scalar transport in geophysical boundary layers

*M.Sc.* Environmental Engineering  
Federal University of Paraná, Curitiba March 2014  
Investigated analytical and numerical aspects of aquifer discharge

*B.Sc.* Environmental Engineering  
Federal University of Paraná, Curitiba January 2012

## RELEVANT PROFESSIONAL EXPERIENCE

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**Climatempo** June 2014 — July 2015  
*Researcher* São Paulo, Brazil

- Ran dispersion models and forecasted wind power supply for the wind energy industry

**Federal University of Paraná** December 2010 — April 2014  
*Researcher* Curitiba, Brazil

- Meteorological and micrometeorological field measurements as well as data processing

## AWARDS AND SCHOLARSHIPS

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**Richard P. Turco exceptional research award** November 2019

- Awarded by UCLA's department of Atmospheric and Oceanic Sciences

**Research assistantship** January 2017 — Present

- Awarded by the Gulf Of Mexico Research Initiative

**Research scholarship** August 2015 — August 2016

- Awarded by the National Institute for Amazonian Research and the Max Planck Institute for Chemistry to work on the Amazonian Tall Tower Observatory project

**“Odelar Leite Linhares” award** October 2014

- Awarded by the Brazilian Society for Applied and Computational Mathematics for best Masters thesis in Applied mathematics in Brazil.

**CAPES scholarship for masters** March 2012 — March 2014

- Awarded by the Coordination for the Improvement of Higher Education Personnel.

## PUBLICATIONS

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## Journal publications

- [1] Marcelo Chamecki, Tomas Chor, Di Yang, and Charles Meneveau. “Material transport in the ocean mixed layer: recent developments enabled by large eddy simulations”. In: *Reviews of Geophysics* 0 (). DOI: 10.1029/2019RG000655.
- [2] **Chor, Tomas**, Ailín Ruiz de Zárate, and Nelson L. Dias. “A Generalized Series Solution for the Boussinesq Equation With Constant Boundary Conditions”. In: *Water Resources Research* 55.4 (2019), pp. 3567–3575. DOI: 10.1029/2018WR024154.
- [3] Cléo Quaresma Dias-Júnior, ..., **Chor, Tomas**, and Antonio Manzi. “Is There a Classical Inertial Sublayer Over the Amazon Forest?” In: *Geophysical Research Letters* 46.10 (2019), pp. 5614–5622. DOI: 10.1029/2019GL083237.
- [4] **Chor, Tomas**, Di Yang, Charles Meneveau, and Marcelo Chamecki. “A Turbulence Velocity Scale for Predicting the Fate of Buoyant Materials in the Oceanic Mixed Layer”. In: *Geophysical Research Letters* 45.21 (2018), pp. 11, 817–11, 826. DOI: 10.1029/2018GL080296.
- [5] **Chor, Tomás**, Di Yang, Charles Meneveau, and Marcelo Chamecki. “Preferential concentration of noninertial buoyant particles in the ocean mixed layer under free convection”. In: *Phys. Rev. Fluids* 3 (6 2018), p. 064501. DOI: 10.1103/PhysRevFluids.3.064501.
- [6] **Tomás L. Chor**, Nelson L. Dias, Alessandro Araújo, and ... “Flux-variance and flux-gradient relationships in the roughness sublayer over the Amazon forest”. In: *Agricultural and Forest Meteorology* 239 (2017), pp. 213–222. ISSN: 0168-1923. DOI: <http://dx.doi.org/10.1016/j.agrformet.2017.03.009>.
- [7] Einara Zahn, **Chor, Tomas L.**, and N. L. Dias. “A Simple Methodology for Quality Control of Micrometeorological Datasets”. In: *American Journal of Environmental Engineering* 6.4A (2016), pp. 135–142. DOI: 10.5923/s.ajee.201601.20.
- [8] **Chor, Tomas L.** and N. L. Dias. “Technical Note: A simple generalization of the Brutsaert and Nieber analysis”. In: *Hydrology and Earth System Sciences* 19.6 (2015), pp. 2755–2761. DOI: 10.5194/hess-19-2755-2015.
- [9] Nelson L. Dias, **Chor, Tomás L.**, and Ailín Ruiz de Zárate. “A semianalytical solution for the Boussinesq equation with nonhomogeneous constant boundary conditions”. In: *Water Resources Research* 50.8 (2014), pp. 6549–6556. ISSN: 1944-7973. DOI: 10.1002/2014WR015437.
- [10] **Chor, Tomas**, N. L. Dias, and Ailín Ruiz de Zárate. “An exact series and improved numerical and approximate solutions for the Boussinesq equation”. In: *Water Resources Research* 49.11 (2013), pp. 7380–7387. DOI: 10.1002/wrcr.20543.
- [11] B. L. Crivellaro, N. L. Dias, and **Chor, Tomas**. “Spectral Effects on Scalar Correlations and Fluxes”. In: *American Journal of Environmental Engineering* 3.1 (2013), pp. 13–17. DOI: 10.5923/j.ajee.20130301.03.

## Invited talks

- [1] T. Chor. “Pymicra, the Python tool for Micrometeorological Analyses”. In: *Programa de Pós-graduação em engenharia ambiental, UFPR, Curitiba*. (Invited speaker). 2016.
- [2] T. Chor. “New analytic solutions to the nonlinear Boussinesq equation for underground water”. In: *Seminários Contínuos do Departamento de Matemática, UFPR, Curitiba*. (Invited speaker). 2014.
- [3] T. Chor. “New analytic solutions to the nonlinear Boussinesq equation for underground water”. In: *CNMAC – National Conference on Applied and Computational Mathematics*. (Invited speaker). 2014.

## Book chapters

- [1] N. L. Dias, Cynara Cunha, Dornelles Vissotto Junior, Maurício F Gobbi, Fernando A S Armani, Lucas E B Hoeltgebaum, Tomás L Chor, and Bianca L Crivellaro. *BALCAR project: Greenhouse gas emissions from hydroelectric dam reservoirs (in Portuguese)*. Chapter 5: Modelling. CEPEL, 2014.

## Recent conference participations

- [1] **Chor, T.**, J C McWilliams, and M Chamecki. “Dust-devil-like vortices in the oceanic mixed layer”. In: *22nd Conference on Atmospheric and Oceanic Fluid Dynamics*. Poster. 2019.
- [2] **Chor, T.**, C. Meneveau, D. Yang, and M. Chamecki. “The dynamics of buoyant particles in the Ocean surface Mixed Layer under free-convection”. In: *AGU Ocean Sciences Meeting*. Poster and talk. 2018.
- [3] **Chor, T.**, C. Meneveau, D. Yang, and M. Chamecki. “The effect of oil droplet size on the surface signature of oil plumes under free-convection”. In: *Gulf of Mexico oil spill and Ecosystem Science Conference*. Talk. 2018.
- [4] **Chor, T.** and N. Dias. “Pymicra: A Python tool for Micrometeorological Analyses”. In: *AGU Fall Meeting*. Poster. 2017.

## OTHER EXPERIENCES

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### **The Burgers Program Research School on Fluid Dynamics**

June 2018

*Participant*

*University of Maryland*

- Talks and workshops on several aspects of turbulence

### **The San Diego Supercomputing Center Summer Institute**

August 2019

*Participant*

*University of California, San Diego*

- Workshops on how to do high-performance computing in research

## RELEVANT TEACHING, OUTREACH AND MENTORSHIP

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### **Author of TED-Ed video on Turbulence**

April 2019

- Conceived and wrote script for TED-Ed video with the goal of popularizing the topic of Turbulence

### **Research mentor**

Fall 2018

*UCLA*

- Mentored an undergraduate student on a project collecting high-frequency atmospheric data

### **Teaching assistant**

Winter 2018 and Fall 2018

*UCLA*

- Teaching introduction to meteorology (3 quarters)

### **Volunteer in the Exploring Your Universe (EYU) event**

April 2018

*UCLA*

- Interacted with attendees of EYU, which is a large outreach event focusing on popularizing science to children

### **Student Recruitment Chair**

Fall 2017 to Fall 2018

*XEP, UCLA*

- Organized recruitment efforts and events for incoming graduate students

### **University teaching experience**

2013

- Several applied math classes for up to 45 third-year engineering students at the Federal University of Paraná.

## OTHER RELEVANT SKILLS

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### **Software developer**

- Creator and developer of Pymicra, the Python tool for Micrometeorological Analyses, among other python packages.

### **Programming languages**

- Python, Fortran, Julia, Bash

### **Languages**

- Portuguese as native language
- Fluent English and Spanish
- Basic French