

Denis Pierrot

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Area of Expertise

Carbonate Cycle in the Ocean, air-sea CO₂ fluxes, Ocean Acidification.

Lead the GOMO funded Ships of Opportunity (SOOP-CO₂) program with 5 partner institutions. Lead the AOML SOOP-CO₂ program with 5-7 ships outfitted with autonomous *p*CO₂ systems. Most of AOML ships sail in the North Atlantic, Caribbean Sea and Gulf of Mexico, but now also in higher latitudes (South and North poles).

Education

Ph.D.	University of Miami	2002
B.S.	University of Miami	1994
Baccalaureat	France	1986

Professional Experience

2020 – present	Research Physical Scientist, NOAA/AOML, Miami, FL
2012 – 2020	Associate Scientist, CIMAS/RSMAS, University of Miami
2006 – 2012	Assistant Scientist, CIMAS/RSMAS, University of Miami
2003 – 2005	Post-Doctoral Associate, MAC/RSMAS, University of Miami
1995 – 2002	Teaching Assistant, MAC/RSMAS, University of Miami
1994 – 1995	Teaching Assistant, Chemistry Department, University of Miami

Publications of interest

Boyer, T., et al. (2023), Effects of the Pandemic on Observing the Global Ocean. Bulletin of the American Meteorological Society, 104, E389-E410, <https://doi.org/10.1175/BAMS-D-21-0210.1>.

Berghoff, C. F., Pierrot, D. et al. (2023), Physical and biological effects on the carbonate system during summer in the Northern Argentine Continental Shelf (Southwestern Atlantic). Journal of Marine Systems, 237, 103828, <https://doi.org/10.1016/j.jmarsys.2022.103828>.

Wanninkhof, R., Pierrot, D., Sullivan, K., Mears, P. and Barbero, L. (2022), Comparison of discrete and underway CO₂ measurements: Inferences on the temperature dependence of the fugacity of CO₂ in seawater. Mar. Chem., 247, 104178, <https://doi.org/10.1016/j.marchem.2022.104178>.

Osborne, E., et al. (2022), Ocean acidification in the Gulf of Mexico: Drivers, impacts, and unknowns. Progress in Oceanography, 209, 102882, <https://doi.org/10.1016/j.pocean.2022.102882>.

Jiang, L.-Q., Pierrot, D., et al. (2022), Best Practice Data Standards for Discrete Chemical Oceanographic Observations. Frontiers in Marine Science, 8, 10.3389/fmars.2021.705638.

Humphreys, M. P., Lewis, E. R., Sharp, J. D. and Pierrot, D. (2022), PyCO₂SYST v1.8: marine carbonate system calculations in Python. Geosci. Model Dev., 15, 15-43, 10.5194/gmd-15-15-2022.

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- Jiang, L. Q., et al. (2021), Coastal Ocean Data Analysis Product in North America (CODAP-NA) – an internally consistent data product for discrete inorganic carbon, oxygen, and nutrients on the North American ocean margins. *Earth Syst. Sci. Data*, 13, 2777-2799, 10.5194/essd-13-2777-2021.
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- Wanninkhof, R., D. Pierrot, K. Sullivan, L. Barbero, and J. Triñanes (2020), A 17-year dataset of surface water fugacity of CO₂ along with calculated pH, aragonite saturation state and air–sea CO₂ fluxes in the northern Caribbean Sea, *Earth Syst. Sci. Data*, 12(3), 1489-1509, doi:10.5194/essd-12-1489-2020.
- Wanninkhof, R., et al., (2019) A Surface Ocean CO₂ Reference Network, SOCONET and Associated Marine Boundary Layer CO₂ Measurements. *Frontiers in Marine Science* 6.
- Pierrot, D. and Steinhoff, T. (2019) Installation of autonomous underway pCO₂ instruments onboard ships of opportunity. NOAA Technical Report, OAR-AOML-50, 31 pp. doi:10.25923/ffz6-0x48
- Chen, S., Hu, C., Barnes B., Wanninkhof, R., Cai, W-J, Barbero, L., Pierrot, D. (2019) A machine learning approach to estimate surface ocean pCO₂ from satellite measurements, *Remote Sensing of Environment*, 228, 203-226, <https://doi.org/10.1016/j.rse.2019.04.019>.
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