

CRISTINA LOZEJ ARCHER

Curriculum Vitae

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Education

- 2004 Doctor of Philosophy (Ph.D.), Civil and Environmental Engineering (April 2004), Stanford University, Stanford, California, USA;
- 1998 Master of Science (M.S.), Meteorology (November 1998), San Jose State University, San Jose, California, USA;
- 1995 Master of Science (M.S.), Civil and Environmental Engineering (November 1995), Politecnico di Milano, Milan, Italy.

Appointments

- 2011–present Associate Professor, Program of Physical Ocean Science and Engineering (70%) - and- Department of Geography (30%), College of Earth, Ocean, and Environment, University of Delaware;
- 2011-2013 Visiting Scientist (July-August 2013, June-August 2012, and June-July 2011), National Center for Atmospheric Research, Boulder (Colorado);
- 2008 – 2011 Assistant Professor, Department of Geological and Environmental Sciences, California State University – Chico (California);
- 2005 – 2011 Consulting Assistant Professor, Department of Civil and Environmental Engineering, Stanford University (California);
- 2007 – 2008 Research Associate, Department of Global Ecology, Carnegie Institution for Sciences, Stanford (California);
- 2005 – 2007 Atmospheric Modeler, Bay Area Air Quality Management District, San Francisco (California);
- 2004 – 2005 Post-Doctoral Scholar, Department of Civil and Environmental Engineering, Stanford University (California);
- 2000 – 2004 Programmer/Consulting Meteorologist, Pacific Gas and Electric (PG&E), Planetweather.com, Golden Gate Weather Services, IPS, and Qwikcast.com;
- 1996 – 1998 Graduate Student Intern, Lockheed-Martin Corporation, Sunnyvale (California);
- 1996 Atmospheric Pollution Modeler, Fondazione Lombardia per l'Ambiente, Milano (Italy);
- 1995 Graduate Student Intern, Waste Management, Como (Italy).

Publications (peer-reviewed only)

H-index: [14](#)

Number of citations: [1824](#)

1. Noel, L., J. Brodie, W. Kempton, **C. L. Archer**, and C. Budischak, 2016: Cost minimization of generation, storage, and new loads in a regional electric system. *Nature Energy*, submitted.
2. **Archer, C. L.**, B. A. Colle, D. L. Veron, F. Veron, and M. J. Sienkiewicz, 2016: On the predominance of unstable atmospheric conditions in the marine boundary layer offshore of the U.S. northeastern coast. *Journal of Geophysical Research - Atmospheres*, accepted.
3. Colle, B. A., M. J. Sienkiewicz, **C. L. Archer**, D. L. Veron, F. Veron, W. Kempton, and J. E. Mak, 2016: [Improving the Mapping and Prediction of Offshore Wind Resources \(IMPOWR\): Experimental overview and first results](#). *Bulletin of the American Meteorological Society*, doi: 10.1175/BAMS-D-14-00253.1.
4. Xie, S., **C. L. Archer**, N. Ghaisas, and C. Meneveau, 2016: [Benefits of collocating vertical-axis and horizontal-axis wind turbines in large wind farms](#). *Wind Energy*, doi: 10.1002/we.1990.
5. Ghaisas, N., and **C. L. Archer**, 2016: Evaluation of layout and atmospheric stability effects in wind farms using large-eddy simulation. *Wind Energy*, under review.
6. Ghaisas, N., and **C. L. Archer**, 2016: [Geometry-based models for studying the effects of wind farm layout](#). *Journal of Atmospheric and Oceanic Technology*, 33, 481-501, doi: 10.1175/JTECH-D-14-00199.1.
7. Firestone, J., **C. L. Archer**, M. P. Gardner, J. A. Madsen, A. K. Prasad, and D. E. Veron, 2015: [Opinion: The time has come for offshore wind power in the United States](#). *Proceedings of the National Academy of Sciences*, 112(39), 11985-11988, doi: 10.1073/pnas.1515376112
8. Xie, S., N. Ghaisas, and **C. L. Archer**, 2015: [Sensitivity issues in finite-difference large-eddy simulations of the atmospheric boundary layer with dynamic subgrid scale models](#). *Boundary-Layer Meteorology*, 157(3), 421-445, doi: 10.1007/s10546-015-0071-3.
9. Xie, S., and **C. L. Archer**, 2015: [Self-similarity and turbulence characteristics of wind turbine wakes via large-eddy simulation](#), *Wind Energy*, 18(10), 1815–1838, doi: 10.1002/we.1792.
10. Simão, H. P., W. B. Powell, **Archer, C. L.**, and W. Kempton, 2015: The challenge of integrating offshore wind power in the U.S. electric grid. Part II: Simulation of electricity market operations. *Renewable Energy*, under review.
11. **Archer, C. L.**, H. P. Simão, W. Kempton, and M. J. Dvorak, 2015: The challenge of integrating offshore wind power in the U.S. electric grid. Part I: Wind forecast error. *Renewable Energy*, under review.
12. Jacobson, M. Z., **C. L. Archer**, W. Kempton, 2014: [Taming hurricanes with arrays of offshore wind turbines](#), *Nature Climate Change*, 4,195–200, doi: 10.1038/nclimate2120.
13. **Archer, C. L.**, L. Delle Monache, and D. Rife, 2014: [Airborne Wind Energy: Optimal locations and variability](#), *Renewable Energy*, 64, 180-186, doi: 10.1016/j.renene.2013.10.044.

14. **Archer, C. L.**, S. Mirzaeifayat, and S. Lee, 2013: [Quantifying the sensitivity of wind farm performance to array layout options using Large-Eddy Simulation](#). *Geophysical Research Letters*, doi: 10.1002/grl.50911.
15. **Archer, C. L.**, B. A. Colle, L. Delle Monache, M. J. Dvorak, J. Lundquist, B. H. Bailey, P. Beaucage, M. J. Churchfield, A. C. Fitch, B. Kosovic, S. Lee, P. J. Moriarty, H. Simao, R. J. A. M. Stevens, D. Veron, J. Zack, 2013: [Meteorology for coastal/offshore wind energy in the United States: Recommendations and research needs for the next 10 years](#). *Bulletin of the American Meteorological Society*, doi: 10.1175/BAMS-D-13-00108.1.
16. **Archer, C. L.**, 2013: Chapter 5 - An introduction to meteorology for airborne wind energy. In [Airborne wind energy - Fundamentals and applications](#). Springer, ISBN 978-3-642-39964-0, 77-90.
17. **Archer, C. L.**, and M. Z. Jacobson, 2013: [Geographical and seasonal variability of the global "practical" wind resources](#). *Applied Geography*, 45, 119-130, doi: 10.1016/j.apgeog.2013.07.006.
18. Jacobson, M. Z., and **C. L. Archer**, 2012: [Saturation wind power potential and its implications for wind energy](#). *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1208993109.
19. Dvorak, M. J., E. D. Stoutenburg, **C. L. Archer**, W. Kempton, and M. Z. Jacobson, 2012: [Where is the ideal location for a US East Coast offshore grid?](#) *Geophysical Research Letters*, doi: 10.1029/2011GL050659.
20. Mason, J. E., and **C. L. Archer**, 2012: [Baseload electricity from wind via Compressed Air Energy Storage \(CAES\)](#). *Renewable and Sustainable Energy Reviews*, 16, 1099-1109, doi: 10.1016/j.rser.2011.11.009.
21. Rogner, H.-H., R. F. Aguilera, **C. L. Archer**, R. Bertani, S. C. Bhattacharya, M. B. Dusseault, L. Gagnon, H. Haberl, M. Hoogwijk, A. Johnson, M. L. Rogner, H. Wagner and V. Yakushev, 2012: [Chapter 7 - Energy Resources and Potentials](#). In *Global Energy Assessment - Toward a Sustainable Future*, Cambridge University Press, Cambridge, UK and New York, NY, USA and the International Institute for Applied Systems Analysis, Laxenburg, Austria, pp. 423-512.
22. Dvorak, M. J., **C. L. Archer**, and M. Z. Jacobson, 2010: [California offshore wind energy potential](#). *Renewable Energy*, doi: 10.1016/j.renene.2009.11.022.
23. **Archer, C. L.**, and K. Caldeira, 2009: [Global assessment of high-altitude wind power](#). *Energies*, 2(2), 307-319, doi: 10.3390/en20200307.
24. Jiang, Q., J. D. Doyle, T. Haack, M. J. Dvorak, **C. L. Archer**, and M. Z. Jacobson, 2008: [Exploring wind energy potential off the California Coast](#). *Geophysical Research Letters*, doi: 10.1029/2008GL034674.
25. **Archer, C. L.**, and K. Caldeira, 2008: [Historical trends in the jet streams](#). *Geophysical Research Letters*, 35, L08803, doi: 10.1029/2008GL033614.
26. **Archer, C. L.**, and M. Z. Jacobson, 2007: [Supplying baseload power and reducing transmissions requirements by interconnecting wind farms](#). *Journal of Applied Meteorology and Climatology*, 46, 1701-1717.

27. W. Kempton, **C. L. Archer**, A. Dhanju, R. W. Garvine, and M. Z. Jacobson, 2007: [Large CO2 reductions via offshore wind power matched to inherent storage in energy end-uses](#). *Geophysical Research Letters*, 34, L02817, doi: 10.1029/2006GL028016.
28. **Archer, C. L.**, and M. Z. Jacobson, 2005: [Evaluation of global wind power](#). *Journal of Geophysical Research*, 110, doi: 10.1029/2004JD005462.
29. **Archer, C. L.**, M. Z. Jacobson, and F. L. Ludwig, 2005: The Santa Cruz Eddy. [Part I: Observations and statistics](#). *Monthly Weather Review*, 133, 767-782.
30. **Archer, C. L.**, and M. Z. Jacobson, 2005: [The Santa Cruz Eddy. Part II: Mechanisms of formation](#). *Monthly Weather Review*, 133, 2387-2405.
31. **Archer, C. L.**, and M. Z. Jacobson, 2003: [The spatial and temporal distributions of U.S. winds and wind power at 80 m derived from measurements](#). *Journal of Geophysical Research*, 108(D9), doi: 10.1029/2002JD002076.