

Current

- 2018 – Present **Professor**
Department of Earth and Planetary Science
University of California, Berkeley, CA
- 2011 – Present **Faculty Scientist**
Climate and Ecosystem Sciences Division
Lawrence Berkeley National Laboratory, Berkeley, CA
- 2016 – Present **Director**
Berkeley Atmospheric Sciences Center
University of California, Berkeley, CA

Education

- 1999 – 2005 **Harvard University**, Cambridge, MA **Ph.D., Physics**
Thesis: Holography and related topics in string theory
- 1995 – 1999 **Yale University**, New Haven, CT **B.S./M.S., Physics**
Magna cum laude **B.S., Mathematics**

Previous positions

- 2016 – 2018 **Associate Professor**
Department of Earth and Planetary Science, UC Berkeley, CA
- 2011 – 2016 **Assistant Professor**
Department of Earth and Planetary Science, UC Berkeley, CA
- 2008 – 2010 **Research Associate**
Department of Earth and Planetary Sciences, Harvard University, MA
- 2006 – 2008 **Environmental Fellow**
Center for the Environment, Harvard University, MA
- 2005 – 2006 **Postdoctoral Fellow**
Woods Hole Research Center, MA

Honors and Awards

- 2018 **Atmospheric Sciences Ascent Award**
American Geophysical Union, Washington, D.C.
- 2016 **Goldman Distinguished Chair in the Physical Sciences**
University of California, Berkeley, CA
- 2013 **Hellman Fellow**
The Hellman Foundation, San Francisco, CA

Publications (group members in bold)

- 2020 **D.M. Romps**, “Theory of tropical moist convection,” *Fundamental Aspects of Turbulent Flows in Climate Dynamics, Lecture Notes of the Les Houches Summer School*, vol. 109, 1–45, Oxford University Press, 2020
- 2020 **D.M. Romps**, “Climate sensitivity and the direct effect of carbon dioxide in a limited-area cloud-resolving model,” *Journal of Climate*, vol. 33, no. 9, 3413–3429, 2020
- 2019 **D.M. Romps**, “Evaluating the future of lightning in cloud-resolving models,” *Geophysical Research Letters*, vol. 46, 14863–14871, 2019
- 2019 S. Endo, D. Zhang, A.M. Vogelmann, P. Kollias, K. Lamer, M. Oue, H. Xiao, W.I. Gustafson, **D.M. Romps**, “Reconciling differences between large-eddy simulations and Doppler-lidar observations of continental shallow cumulus cloud-base vertical velocity,” *Geophysical Research Letters*, vol. 46, 11539–11547, 2019
- 2019 **D.M. Romps**, J.P. Retzinger, “Climate news articles lack basic climate science,” *Environmental Research Communications*, vol. 1, 081002, 2019
- 2019 **J.T. Seeley**, **N. Jeevanjee**, **D.M. Romps**, “FAT or FiTT: Are anvil clouds or the tropopause temperature-invariant?,” *Geophysical Research Letters*, vol. 46, 1842–1850, 2019
- 2019 **J.T. Seeley**, **N. Jeevanjee**, W. Langhans, **D.M. Romps**, “Formation of tropical anvil clouds by slow evaporation,” *Geophysical Research Letters*, vol. 46, 492–501, 2019
- 2018 **D.M. Romps**, **A.B. Charn**, R.H. Holzworth, W.E. Lawrence, J. Molinari, D. Vollaro, “CAPE times P explains lightning over land but not the land-ocean contrast,” *Geophysical Research Letters*, vol. 45, no. 22, 12623–12630, 2018
- 2018 **N. Jeevanjee**, **D.M. Romps**, “Mean precipitation change from a deepening troposphere,” *Proceedings of the National Academy of Sciences*, vol. 115, no. 45, 11465–11470, 2018
- 2018 **D.M. Romps**, **R. Öktem**, “Observing clouds in 4D with multiview stereophotogrammetry,” *Bulletin of the American Meteorological Society*, vol. 99, no. 12, 2575–2586, 2018
- 2018 C.J. Muller, **D.M. Romps**, “Acceleration of tropical cyclogenesis by self-aggregation feedbacks,” *Proceedings of the National Academy of Sciences*, vol. 115, no. 12, 2930–2935, 2018
- 2018 **S.Q. Duan**, J.S. Wright, **D.M. Romps**, “On the utility (or futility) of using stable water isotopes to constrain the bulk properties of tropical convection,” *Journal of Advances in Modeling Earth Systems*, vol. 10, no. 2, 516–529, 2018

- 2017 **D.M. Romps**, “An exact expression for the lifting condensation level,” *Journal of the Atmospheric Sciences*, vol. 74, no. 12, 3891–3900, 2017
- 2017 **J.P. Edman, D.M. Romps**, “Beyond the rigid lid: Baroclinic modes in a structured atmosphere,” *Journal of the Atmospheric Sciences*, vol. 74, no. 11, 3551–3566, 2017
- 2017 **D.M. Romps**, A.M. Vogelmann, “Methods for estimating 2D cloud size distributions from 1D observations,” *Journal of the Atmospheric Sciences*, vol. 74, no. 10, 3405–3417, 2017
- 2016 **D.M. Romps**, “Clausius-Clapeyron scaling of CAPE from analytical solutions to RCE,” *Journal of the Atmospheric Sciences*, vol. 73, no. 9, 3719–3737, 2016
- 2016 **J.T. Seeley, D.M. Romps**, “Tropical cloud buoyancy is the same in a world with or without ice,” *Geophysical Research Letters*, vol. 43, no. 7, 3572–3579, 2016
- 2016 **D.M. Romps**, “Reply to comments on “MSE minus CAPE is the true conserved variable for an adiabatically lifted parcel,”” *Journal of the Atmospheric Sciences*, vol. 73, no. 6, 2577–2583, 2016
- 2016 **D.M. Romps**, “The Stochastic Parcel Model: A deterministic parameterization of stochastically entraining convection,” *Journal of Advances in Modeling Earth Systems*, vol. 8, no. 1, 319–344, 2016
- 2016 **D.M. Romps, N. Jeevanjee**, “On the sizes and lifetimes of cold pools,” *Quarterly Journal of the Royal Meteorological Society*, vol. 142, no. 696, 1517–1527, 2016
- 2016 **N. Jeevanjee, D.M. Romps**, “Effective buoyancy at the surface and aloft,” *Quarterly Journal of the Royal Meteorological Society*, vol. 142, no. 695, 811–820, 2016
- 2015 **J.T. Seeley, D.M. Romps**, “Why does convective available potential energy (CAPE) increase with warming?,” *Geophysical Research Letters*, vol. 42, no. 23, 10429–10437, 2015
- 2015 **W. Langhans, D.M. Romps**, “The origin of water-vapor rings in tropical oceanic cold pools,” *Geophysical Research Letters*, vol. 42, no. 18, 7825–7834, 2015
- 2015 **D.M. Romps**, “MSE minus CAPE is the true conserved variable for an adiabatically lifted parcel,” *Journal of the Atmospheric Sciences*, vol. 72, no. 9, 3639–3646, 2015
- 2015 **D.M. Romps, R. Öktem**, “Stereo photogrammetry reveals substantial drag on cloud thermals,” *Geophysical Research Letters*, vol. 42, no. 12, 5051–5057, 2015
- 2015 **N. Jeevanjee, D.M. Romps**, “Effective buoyancy, inertial pressure, and the mechanical generation of boundary-layer mass flux by cold pools,” *Journal of the Atmospheric Sciences*, vol. 72, no. 8, 3199–3213, 2015

- 2015 **D.M. Romps, A.B. Charn**, “Sticky thermals: Evidence for a dominant balance between buoyancy and drag in cloud updrafts,” *Journal of the Atmospheric Sciences*, vol. 72, no. 8, 2890–2901, 2015
- 2015 **J.P. Edman, D.M. Romps**, “Self-consistency tests of large-scale-dynamics parameterizations for single-column modeling,” *Journal of Advances in Modeling Earth Systems*, vol. 7, no. 1, 320–334, 2015
- 2015 **R. Öktem, D.M. Romps**, “Observing atmospheric clouds through stereo reconstruction,” *IS&T/SPIE Electronic Imaging*, vol. 9393, 93930H-1, 2015
- 2015 **J.T. Seeley, D.M. Romps**, “The effect of global warming on severe thunderstorms in the United States,” *Journal of Climate*, vol. 28, no. 6, 2443–2458, 2015
- 2015 **W. Langhans, K. Yeo, D.M. Romps**, “Lagrangian investigation of the precipitation efficiency of convective clouds,” *Journal of the Atmospheric Sciences*, vol. 72, no. 3, 1045–1062, 2015
- 2014 **D.M. Romps, J.T. Seeley, D. Vollaro, J. Molinari**, “Projected increase in lightning strikes in the United States due to global warming,” *Science*, vol. 346, no. 6211, 851–854, 2014
- 2014 M. Duarte, A.S. Almgren, K. Balakrishnan, J.B. Bell, **D.M. Romps**, “A numerical study of methods for moist atmospheric flows: compressible equations,” *Monthly Weather Review*, vol. 142, no. 11, 4269–4283, 2014
- 2014 **D.M. Romps**, “An analytical model for tropical relative humidity,” *Journal of Climate*, vol. 27, no. 19, 7432–7449, 2014
- 2014 **R. Öktem, Prabhat, J. Lee, A. Thomas, P. Zuidema, D.M. Romps**, “Stereo photogrammetry of oceanic clouds,” *Journal of Atmospheric and Oceanic Technology*, vol. 31, no. 7, 1482–1501, 2014
- 2014 **J.P. Edman, D.M. Romps**, “An improved weak-pressure-gradient scheme for single-column modeling,” *Journal of the Atmospheric Sciences*, vol. 71, no. 7, 2415–2429, 2014
- 2014 **D.M. Romps**, “Rayleigh damping in the free troposphere,” *Journal of the Atmospheric Sciences*, vol. 71, no. 2, 553–565, 2014
- 2013 **N. Jeevanjee, D.M. Romps**, “Convective self-aggregation, cold pools, and domain size,” *Geophysical Research Letters*, vol. 40, 2013
- 2013 **K. Yeo, D.M. Romps**, “Measurement of convective entrainment using Lagrangian particles,” *Journal of the Atmospheric Sciences*, vol. 70, no. 1, 266–277, 2013
- 2012 **D.M. Romps**, “On the equivalence of two schemes for convective momentum transport,” *Journal of the Atmospheric Sciences*, vol. 69, no. 12, 3491–3500, 2012

- 2012 **D.M. Romps**, “Numerical tests of the weak pressure gradient approximation,” *Journal of the Atmospheric Sciences*, vol. 69, no. 9, 2846–2856, 2012
- 2012 **D.M. Romps**, “Weak pressure gradient approximation and its analytical solutions,” *Journal of the Atmospheric Sciences*, vol. 69, no. 9, 2835–2845, 2012
- 2012 J. Molinari, **D.M. Romps**, D. Vollaro, and L. Nguyen, “CAPE in tropical cyclones,” *Journal of the Atmospheric Sciences*, vol. 69, no. 8, 2452–2463, 2012
- 2011 **D.M. Romps**, Z. Kuang, “A transilient matrix for moist convection,” *Journal of the Atmospheric Sciences*, vol. 68, no. 9, 2009–2025, 2011
- 2011 **D.M. Romps**, “Response of tropical precipitation to global warming,” *Journal of the Atmospheric Sciences*, vol. 68, no. 1, 123–138, 2011
- 2010 P.N. Blossey, Z. Kuang, **D.M. Romps**, “Isotopic composition of water in the tropical tropopause layer in cloud-resolving simulations of an idealized tropical circulation,” *Journal of Geophysical Research*, vol. 115, D24309, 2010
- 2010 **D.M. Romps**, “A direct measure of entrainment,” *Journal of the Atmospheric Sciences*, vol. 67, no. 6, 1908–1927, 2010
- 2010 **D.M. Romps**, Z. Kuang “Nature versus nurture in shallow convection,” *Journal of the Atmospheric Sciences*, vol. 67, no. 5, 1655–1666, 2010
- 2010 **D.M. Romps**, Z. Kuang “Do undiluted convective plumes exist in the upper tropical troposphere?,” *Journal of the Atmospheric Sciences*, vol. 67, no. 2, 468–484, 2010
- 2009 **D.M. Romps**, Z. Kuang, “Overshooting convection in tropical cyclones,” *Geophysical Research Letters*, vol. 36, L09804, 2009
- 2008 **D.M. Romps**, “The dry-entropy budget of a moist atmosphere,” *Journal of Atmospheric Sciences*, vol. 65, no. 12, 3779–3799, 2008
- 2005 A. Simons, A. Strominger, D.M. Thompson (**D.M. Romps**), X. Yin, “Supersymmetric branes in $\text{AdS}_2 \times \text{S}^2 \times \text{CY}_3$,” *Physical Review D*, vol. 71, no. 6, 066008, 2005, hep-th/0406121
- 2004 D.M. Thompson (**D.M. Romps**), “AdS solutions to the 2D type 0A effective action,” *Physical Review D*, vol. 70, no. 10, 106001, 2004, hep-th/0312156
- 2004 A. Strominger, D.M. Thompson (**D.M. Romps**), “Quantum Bousso bound,” *Physical Review D*, vol. 70, no. 4, 044007, 2004, hep-th/0303067
- 2002 D.M. Thompson (**D.M. Romps**), “Descent relations in type 0A/0B,” *Physical Review D*, vol. 65, no. 10, 106005, 2002, hep-th/0105314