

DAVEN K. HENZE

University of Colorado at Boulder
Mechanical Eng., UCB 427
Boulder, CO 80309

daven.henze@colorado.edu
phone: 303-492-8716
office: ECME 265



Education

University of Washington, Chemistry	B.S. (2001)
University of Washington, Chemical Engineering	B.S. (2001)
California Institute of Technology, Chemical Engineering	M.S. (2004)
California Institute of Technology, Chemical Engineering	Ph.D. (2007)

Appointments

- 2009- Assistant Professor of Mechanical Engineering, University of Colorado, Boulder.
- 2007-2009 Earth Institute Postdoctoral Fellow, Columbia University, NASA GISS.
- 2007 Postdoctoral Scholar, California Institute of Technology.

Fellowships and Awards

- 2007 **Columbia University Earth Institute Postdoctoral Fellowship**
- 2007 **William and Sonya Davidow Graduate Fellow** *Awarded to top graduate student in Environmental Science at Caltech.*
- 2002-2003 **William H. Corcoran Memorial Fellowship for Chemical Engineering** *Provided funding for first year of graduate studies.*

Recent Synergistic Activities

- 2009 GEOS-Chem Adjoint Model Scientist and Working Group Chair. Co-chair adjoint modeling sessions at the GEOS-Chem Users' Meeting, Cambridge, MA.
- 2007 Attended 3-week workshop on Data Assimilation and Remote Sensing at University of Maryland College Park, MD. <http://www.weatherchaos.umd.edu/workshop/index.php>

Publications

- 2009 Kopacz, M., D. J. Jacob, J. A. Fisher, J. A. Logan, L. Zhang, I. A. Megretskaya, R. M. Yantosca, K. Singh, **D. K. Henze**, J. P. Burrows, M. Buchwitz, I. Khlystova, W. W. McMillan, J. C. Gille, D. P. Edwards, A. Eldering, V. Thouret, and P. Nedelec, Global estimates of CO sources with high resolution by adjoint inversion of multiple satellite datasets (MOPITT, AIRS, SCIAMACHY, TES), *Atmos. Chem. Phys. Discuss.*, 9, 19967–20018.
- 2009 **Henze, D. K.**, J. H. Seinfeld, and D. T. Shindell, Inverse modeling and mapping U.S. air quality influences of inorganic PM_{2.5} precursor emissions with the adjoint of GEOS-Chem, *Atmos. Chem. Phys.*, 9, 5877–5903.

- 2009 Zhang, L., D. J. Jacob, M. Kopacz, **D. K. Henze**, and D. A. Jaffe, Intercontinental source attribution of ozone pollution at western U.S. sites using an adjoint method, *Geophys. Res. Lett.*, 36, L11810, doi:10.1029/2009GL037950.
- 2009 Kopacz, M., D. Jacob, **D. K. Henze**, C. L. Heald, D. G. Streets, and Q. Zhang, A comparison of analytical and adjoint Bayesian inversion methods for constraining Asian sources of CO using satellite (MOPITT) measurements of CO columns, *J. Geophys. Res.*, 114, D04305, doi:10.1029/2007JD009264.
- 2009 Pye, H. O. T., J. H. Seinfeld, H. Liao, S. Wu, L. J. Mickely, D. J. Jacob, and **D. K. Henze**, Effect of changes in climate and emissions on future sulfate-nitrate-ammonium aerosol levels in the United States, *J. Geophys. Res.*, 114, D01205, doi:10.1029/2008JD010701.
- 2009 Eller, P., K. Singh, A. Sandu, K. Bowman, **D. K. Henze**, and M. Lee, Implementation and evaluation of an array of chemical solvers in a global chemical transport model, *Geosci. Mod. Devel.*, 2, 185-207.
- 2008 Liang, M. C., **D. K. Henze**, M. Adamkovic, E. F. Chu, K. Boering, and Y. L. Yung, Synergistic study of hydrocarbon photochemistry in the laboratory and planetary atmospheres, *submitted*.
- 2008 Fu, T.-M., D. J. Jacob, F. Wittrock, J. P. Burrows, M. Vrekoussis, and **D. K. Henze**, Global budgets of atmospheric glyoxal and methylglyoxal, and implications for formation of secondary organic aerosols, *J. Geophys. Res.*, 113, D15303, doi:10.1029/2007JD009505.
- 2008 **Henze, D. K.**, J. H. Seinfeld, N. G. Ng, J. H. Kroll, T.-M. Fu, D. J. Jacob, and C. L. Heald, Global modeling of secondary organic aerosol formation from aromatic hydrocarbons: High- vs low-yield pathways, *Atmos. Chem. Phys.*, 8, 2405-2420.
- 2008 Heald, C. L., **D. K. Henze**, J. H. Seinfeld, L. W. Horowitz, J. Feddema, J.-F. Lamarque, A. Guenther, P. G. Hess, F. Vitt, A. H. Goldstein, and I. Fung, Predicted change in secondary organic aerosol concentrations in response to future climate, emissions, and land-use change, *J. Geophys. Res.*, 113, D05211, doi:10.1029/2007JD009092.
- 2007 Zhang, Y., J.-P. Huang, **D. K. Henze**, and J. H. Seinfeld, The role of isoprene in secondary organic aerosol formation on a regional scale, *J. Geophys. Res.*, 112, D20207, doi:10.1029/2007JD008675.
- 2007 **Henze, D. K.**, A. Hakami and J. H. Seinfeld, Development of the adjoint of GEOS-Chem, *Atmos. Chem. Phys.*, 7, 2413-2433.
- 2007 Hakami, A., **D. K. Henze**, J. H. Seinfeld, K. Singh, A. Sandu, S. Kim, D. Byun, and Q. Li, The adjoint of CMAQ, *Environ. Sci. Technol.*, 41(22), 7807-7818, doi:10.1021/es070944p.
- 2006 Liao, H., **D. K. Henze**, J. H. Seinfeld, W. Shiliang, and L. J. Mickley, Biogenic secondary organic aerosol over the United States: comparison of climatological simulations with observations, *J. Geophys. Res.*, 112, D06201, doi:10.1029/2006JD007813.
- 2006 **Henze, D. K.**, and J. H. Seinfeld, Global secondary organic aerosol formation from isoprene oxidation, *Geophys. Res. Lett.*, 33, L09812, doi:10.1029/2006GL025976.
- 2005 Sandu, A., W. Liao, G. R. Carmichael, **D. K. Henze**, and J. H. Seinfeld, Inverse modeling of aerosol dynamics using adjoints: Theoretical and numerical considerations, *Aerosol Sci. Tech.*, 39, 677-694, doi:10.1080/02786820500182289.
- 2005 Hakami, A., **D. K. Henze**, J. H. Seinfeld, T. Chai, Y. Tang, G. R. Carmichael, and A. Sandu, Adjoint inverse modeling of black carbon during the Asian Pacific Regional Aerosol Characterization Experiment, *J. Geophys. Res.*, 110, D14301, doi:10.1029/2004JD005671.
- 2004 **Henze, D. K.**, J. H. Seinfeld, W. Liao, A. Sandu, and G. R. Carmichael, Inverse modeling of aerosol dynamics: Condensational growth, *J. Geophys. Res.*, 109, D14201, doi:10.1029/2004JD004593.
- 2004 Tantillo, D. J., R. Hoffmann, K. N. Houk, P. M. Warner, E. C. Brown, and **D. K. Henze**, Extended barbaralanes: Sigmatropic shiftamers or alpha-polyacenes? *J. Am. Chem. Soc.*, 126, 13, 4256-4263.

2002 Brown, E. C., **D. K. Henze**, and W. T. Borden, Are 1,5-disubstituted semibullvalenes that have C-2v equilibrium geometries necessarily bishomoaromatic?, *J. Am. Chem. Soc.*, 124, 50, 14977-14982.

Electronic copies of publications available at <http://spot.colorado.edu/~henzed/pubs.html>