

Ian T. Baker
Curriculum Vitae

Research Scientist III
Cooperative Institute for Research in the Atmosphere (CIARA)
Colorado State University
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Education

PhD, Ecology, 2011

Colorado State University
Thesis Advisor: A. Scott Denning
Title: Biophysical Behavior in Tropical South America

MS, Atmospheric Science, 1994

Colorado State University
Emphasis: Cloud Microphysics

BA, Earth Science, 1988

University of Northern Colorado

Employment

April 2020-Present: Research Scientist, Cooperative Institute for Research in the Atmosphere (CIARA), Fort Collins CO.

July 2011-March 2020: Research Scientist, Atmospheric Science Department, Colorado State University, Fort Collins CO.

February 1999-June 2011: Research Associate, Atmospheric Science Department, Colorado State University, Fort Collins CO.

June 1993-February 1999: Associate Scientist, Mission Research Corporation, Fort Collins CO.

January 1991-May 1993: Graduate Assistant, Research Applications Program (RAP), National Center for Atmospheric Research (NCAR), Boulder CO.

January 1989-December 1990: Graduate Research Assistant, Atmospheric Science Department, Colorado State University, Fort Collins CO

Member

American Geophysical Union

Associate Editor

Journal of Geophysical Research-Biogeosciences

Biosketch

I have over 20 years experience studying the interaction of the atmosphere and terrestrial biosphere, including the exchange of momentum, energy, moisture, and trace gases. An integral component of this research is the study of carbon cycle dynamics and vegetation constraint on the Bowen ratio, and bidirectional interaction between the atmosphere and land. My studies have used observations from surface, airborne, and satellite platforms on scales from a few km² (e.g. eddy covariance footprint) to ecoregions, continents, and the globe. I have developed and evaluated numerical models that simulate surface-atmosphere exchange across these scales. I have experience developing and evaluating models that explore the use of novel methods to constrain estimates of the Bowen ratio and surface gas exchange. These include the representation of discrimination of carbon isotopes across the stomate and during photosynthesis, the exchange of Carbonyl Sulfide (OCS, or COS) between the atmosphere and plants and soils, and the simulation of Solar Induced Fluorescence (SIF) in numerical models. I have considerable experience with the representation and influence of the soil moisture constraint on vegetation status and evapotranspiration. I also have experience in evaluating the dependence of simulated surface-atmosphere fluxes and processes on parameterizations and spatial scale of models. I collaborate broadly with researchers around the globe, and have presented my results widely at conferences, workshops, and in the refereed literature.

Publications

(Oral and poster presentations are listed following publications, on page 13)

2024

Baker, I.T., A. E. Schuh, J. B. Miller, C. O'Dell, Sean Crowell, S. Gallup, A. S. Denning, D. Baker, S. Basu, M. Bertolacci, F. Chevallier, N. Cressie, F. Deng, K. Haynes, M. S. Johnson, J. Liu, Z. Liu, S. Maksyutov, S. M. Miller, H. Peiro, S. Philip, B. Weir, A. Zammit-Mangion, N. Zeng, 2024: New Insights into Seasonal Carbon Exchanges in the Amazon Rainforest. *Glob. Biogeochem. Cy.*, in review.

2023

Lin, G., Leung, L.R., Lee, J., Harrop, B.E., Baker, I.T., Branson, M.D., Denning, A.S., Jones, C.R., Ovchinnikov, M., Randall, D.A. and Yang, Z., 2023. Modeling Land–Atmosphere Coupling at Cloud–Resolving Scale Within the Multiple Atmosphere Multiple Land (MAML) Framework in SPE3SM. *J. Adv. Mod. Earth Sy.*, 15(2), p.e2022MS003101.

2022

Gourdji, S.M., A. Karion, I. Lopez-Coto, S. Ghosh, K.L. Mueller, Y. Zhou, C.A Williams, I.T. Baker, K.D. Haynes, J.R. Whetsone, 2022; A modified vegetation photosynthesis and respiration model (VPRM) for the Eastern USA and Canada, evaluated with comparison to atmospheric observations and other biospheric models. *J. Geophys. Res. B.*, 127(1), doi:10.1029/2021JG006290.

Kuai, L., N.C. Parazoo, J.J. Shi, C.E. Miller, I.T. Baker, A.A. Bloom, K. Bowman, M. Lee Z.C. Zeng, R. Commane, S.A. Montzka, J. Berry, C. Sweeney, J.B. Miller, H.L. Yung, 2022: Quantifying

Northern High Latitude Gross Primary Productivity (GPP) Using Carbonyl Sulfide (OCS). *Glob. Biogeochem. Cy.* 36(9), doi:10.1029/2021GB007216.

Piero, H., S. Crowell, A. Schuh, D.F. Baker, C. O'Dell, A.R. Jacobson, F. Chevalier, J.J.Liu, A. Eldering, D. Crisp, F. Deng, B. Weir, S. Basu, M.S. Johnson, S. Philip, I.T. baker, 2022: Four years of global carbon cycle observed from the Orbiting Carbon Observatory 2 (OCO-2) version 9 and in situ data and comparison to OCO-2 version 7. *Atmos. Chem. Phys.*, 22(2), 1097-1130, doi: 10.5194/acp-22-1097-2022.

Stinecipher, J.R., P. Cameron-Smith, L. Kuai, N. Glatthor, M. Hoepfner, I.T. Baker, C. Beer, K. Bowman, M. Lee, S.M. Miller, N.P. Parazoo, J.E. Campbell, 2022: Remotely Sensed Carbonyl Sulfide Constrains Model Estimates of Amazon Primary Productivity. *Geophys. Res. Lett.*, 49(9), doi:10.1029/2021GL096802.

2021

Davis, K.J., E.V. Browell, S. Feng, T. Lauvaux, M.D. Obland, S. Pal., B.C. Baier, D.F. Baker, I.T. Baker, Z.R. Barkley, K.W. Bowman, Y. Cui, A.S. Denning,, J.P., DiGangi, J.T. Dobler, A. Fried, T. Gerken, K. Keller, B. Li, A.R. Nehrir, C.P., Normile, C.W. O'Dell, L.E. Ott, A. Roiger, A.E. Schuh, C. Sweeney, Y. Wei, M. Xue, C.W. Williams, 2021: The Atmospheric Carbon and Transport (ACT) America Mission. , *Bull. Amer. Meteorol. Soc.*, E1714-E1734, <https://doi.org/10.1175/BAMS-D-20-0300.1>.

Feng, S., T. Lavaux, C.A. Williams, K.J. Davis, Y. Zhou, I. Baker, Z.R. Barkley, D. Wesloh (2021). Joint CO₂ Mole Fraction and Flux Analysis Confirms Missing Processes in CASA Terrestrial Carbon Uptake over North America. *Glob. Biogeochem. Cy.*, 35, e2020GB006914, <https://doi.org/10.1029/2020GB006914>.

Gallup, S.M., I.T. Baker, J.L. Gallup, N. Restrepo-Coupe, K.D. Haynes, N.M. Geyer, A.S. Denning (2021). Accurate simulation of both sensitivity and variability for Amazonian photosynthesis: Is it too much to ask? *J. Adv. Mod. Earth Sy.*, 13(8), e2021MS002555, doi:10.1029/2021MS002555.

Gourdji, S., A. Karion, I. Lopez-Coto, S. Ghosh, K. Mueller, Y. Zhou, C.A. Williams, I. Baker, K.D. Haynes, J. Whetstone (2021). An improved Vegetation Photosynthesis and Respiration Model (VPRM) in the eastern USA and Canada, evaluated with comparison to atmospheric CO₂ tower observations and other biospheric models. *J. Geophys. Res.*, 127, e2021JG006290, <https://doi.org/10.1029/2021JG006290>.

Haynes, K.D., I.T. Baker, and A.S. Denning. 2021. SiB4 Modeled Global 0.5-Degree Monthly Carbon Fluxes and Pools, 2000-2018. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAAC/1848>

Haynes, K.D., I.T. Baker, and A.S. Denning. 2021. SiB4 Modeled Global 0.5-Degree Daily Carbon Fluxes and Pools, 2000-2018. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAAC/1849>

Haynes, K.D., I.T. Baker, and A.S. Denning. 2021. SiB4 Modeled Global 0.5-Degree Hourly Carbon Fluxes and Productivity, 2000-2018. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAAC/1847>

- Hu, L., S., Montzka, A. Kaushik, A. Andrews, C. Sweeney, J. Miller, I. Baker, S. Denning, E. Campbell, Y. Shiga, C. Siso, M. Crotwell, K. McKain, K. Thining, B. Hall, J. Elkins, P. Tans, M. Whelan, P. Suntharlingam, I. Vimont (2021). COS-derived GPP relationships with temperature and light help explain high-latitude atmospheric CO₂ seasonal cycle amplification.. *Proc. Nat. Acad. Sci.*, 118(33), e21034423118, doi:<https://doi.org/10.1073/pnas.2117736118>.
- Kooijmans, L.M.J, A. Cho, J. Ma, A. Kaushik, K. D. Haynes, I. Baker, I. T. Lujikx, M. Groenink, W. Peters, J. Miller, J. Berry, J. Oge, L. K. Meredith, W. Sun, K.-M. Kohonen, T. Vesala, I. Mammarella, H. Chen, F. Spielmann, G. Wohlfahrt, M. Berkelhammer, M. Whelan, K. Maseyk, U. Seibt, R. Commane, R. Wehr, M. Krol. 2021. Evaluation of carbonyl sulfide biosphere exchange in the Simple Biosphere Model (SiB4). 18(24), 6547-6565, doi:10.5194/bg-18-6547-2021.
- Parazoo, N., K. Bowman, B. Baier, J. Liu, M. Lee, L. Kuai, Y. Shiga, I. Baker, M. Whelan, S. Feng, M. Krol, C. Sweeney, K.J. Davis (2021). Covariation of airborne biogenic tracers (CO₂, COS and CO) support stronger than expected growing season photosynthetic uptake in the southeastern US. *Glob. Biogeochem. Cy.*, 35(10), e23021GB006956, doi:10.1029/2021GB006956.
- Periera, K.M.P., R.S. Lokupitiya, D. Zupanski, A.S. Denning, R.G.N. Meegama, E.Y.K. Lokupitiya, P.K. Patra, I. Baker, M. Zupanski (2021). Estimation of global scale carbon fluxes using Maximum Likelihood Ensemble Filter. *J. Geophys. Res.*, in review
- Piero, H., S. Crowell, A. Schuh, D.F. Baker, C. O'Dell, A.R. Jacobson, F. Chevallier, J.. Liu, A. Eldering, D. Crisp, F. Deng, B. Weir, S. Basu, M.S. Johnson, S. Philip, I. Baker (2021). Four years of global carbon cycle observed from OCO-2 version 9 and *in situ* data, and comparison to OCO-2v7. *Atmos. Chem. Phys.*, doi: 10.5194/acp-2021-373.
- Restrepo-Coupe, N., L.P. Albert, M. Longo, I. Baker, N.M. Levine, L.M. Mercado, A.C. da Araujo, B.O. Christofferson, M.H. Costa, D.R. Fitzjarrald, D. Galbraith, H. Imbuzeiro, Y. Malhi, C. von Randow, X. Zeng, P. Moorcroft, S.R. Saleska (2021). Understanding water and energy fluxes in Amazonia: Lessons from an observation-model intercomparison. *Glob. Change Biol.*, doi:10.1111/gcb.15555.
- Stinecipher, J.R., P. Cameron-Smith, L. Kuai, N. Glatthor, M. Höpfner, I. Baker, C. Beer, K. Bowman, M. Lee, S. Miller, N. Parazoo, J.E. Campbell (2021). Remotely sensed carbonyl sulfide constrains model estimates of Amazon primary productivity. *Geophys. Res. Lett.*, in review
- Villalba, G., Whelan, M., Montzka, S. A., Cameron-Smith, P. J., Fischer, M., Zumkehr, A., T. Hilton, J. Stinecipher, I. Baker, R.P. Bambha, H.A. Michelson, B.W. LaFranchi, C. Estruch, E. Campbell (2021). Exploring the potential of using carbonyl sulfide to track the urban biosphere signal. *J. Geophys. Res. Atm.*, 126, e2020JD034106. <https://doi.org/10.1029/2020JD034106>.

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- Parazoo, N.C., T. Magney, A. Norton, B. Raczka, C. Bacour, F. Maignan, I. Baker, Y. Zhang, B. Qiu, N. MacBean, D.R. Bowling, S.P. Burns, P.D. Blanken, J. Stutz, K. Grossman, C. Frankenberg, 2020: Wide Discrepancies in the Magnitude and Direction of Modeled SIF in Response to Light Conditions. *Biogeosciences*, <https://doi.org/10.5194/bg-2019-508>.
- Smith, N.E., L.M.J. Kooijmans, G. Koren, E. van Schaik, A.M. van der Woude, N. Wanders, M. Ramonert, I. Xueref-Remy, L. Seibicke, G. Manca, C. Brümmer, I.T. Baker, K.D. Haynes, I.T.

Luijkx, W. Peters (2020). Spring enhancement and summer reduction in carbon uptake during the 2018 drought in northwestern Europe. *Phil. Trans. R. Soc. B*, 375: 20190509. <http://dx.doi.org/10.1098/rstb.2019.0509>.

Zhou, Y., Williams, C. A., Lauvaux, T., Davis, K. J., Feng, S., Baker, I., et al. (2020). A multiyear gridded data ensemble of surface biogenic carbon fluxes for North America: Evaluation and analysis of results. *Journal of Geophysical Research: Biogeosciences*, 125, e2019JG005314. <https://doi.org/10.1029/2019JG005314>

2019

Baker, I.T., A.S. Denning, D.A. Dazlich, A.B. Harper, M.D. Branson, D.A. Randall, M.C. Phillips, K.D. Haynes, S.M. Gallup (2019). Surface-Atmosphere Coupling Scale, the Fate of Water, and Ecophysiological Function in a Brazilian Forest. *J. Adv. Mod. Earth Sy.*, 11(8), 2523-2546, doi:10.1029/2019MS001650.

Feng, S., Lauvaux, T., Davis, K. J., Keller, K., Zhou, Y., Williams, C., et al. (2019). Seasonal characteristics of model uncertainties from biogenic fluxes, transport, and large-scale boundary inflow in atmospheric CO₂ simulations over North America. *J. Geophys. Res. A*. <https://doi.org/10.1029/2019JD031165>

Haynes, K., Baker, I. T., Denning, S., Stöckli, R., Schaefer, K., Lokupitiya, E. Y., Haynes, J. M. (2019). Representing grasslands using dynamic prognostic phenology based on biological growth stages: 1. Implementation in the Simple Biosphere Model (SiB4). *J. Adv. Mod. Earth Sy.*, 11. <https://doi.org/10.1029/2018MS001540>

Haynes, K. D., Baker, I. T., Denning, A. S., Wolf, S., Wohlfahrt, G., Kiely, G., et al. (2019). Representing grasslands using dynamic prognostic phenology based on biological growth stages: 2. Carbon cycling. , *J. Adv. Mod. Earth Sy.*, 11. <https://doi.org/10.1029/2018MS001541>

2018

Byrne, B., Wunch, D., Jones, D. B. A., Strong, K., Deng, F., Baker, I., et al. (2018). Evaluating GPP and respiration estimates over northern midlatitude ecosystems using solar-induced fluorescence and atmospheric CO₂ measurements. *J. Geophys. Res.*, 123. <https://doi.org/10.1029/2018JG004472>

2017

Baker, I.T., P.J. Sellers, A.S. Denning, I. Medina, P. Kraus, K.D. Haynes, 2017: Closing the scale gap between land surface parameterizations and GCMs with a new scheme, SiB3-Bins. *J. Adv. Mod. Earth Sy.*, 9, doi:10.1002/2016MS000764.

Campbell, J. E., J. Kesselmeier, D. Yakir, J. A. Berry, P. Peylin, S. Belviso, T. Vesala, K. Maseyk, U. Seibt, H. Chen, M. E. Whelan, T. W. Hilton, S. A. Montzka, M. B. Berkelhammer, Sinikka T. Lennartz, L. Kuai, G. Wohlfahrt, Y. Wang, N. J. Blake, D. R. Blake, J. Stinecipher, I. Baker, and S. Sitch (2017), Assessing a new clue to how much carbon plants take up, *Eos*, 98, <https://doi.org/10.1029/2017EO075313>. Published on 05 July 2017.

Campbell, J. E., M. Whelan, J. Berry, T. Hilton, A. Zumkehr, J. Stinecipher, Y. Lu, A. Kornfeld, U. Seibt, T.E. Dawson, S.A. Montzka, I.T. Baker, S. Kulkarni, Y. Wang, S.C. Herndon, MS. Zahniser, R. Commane, M.E. Loik, 2017. Plant uptake of atmospheric carbonyl sulfide in coast

redwood forests. *J. Geophys. Res., B*, 122. <https://doi.org/10.1002/2016JG003703>

Hilton, T., M. Whelan, A. Zumkehr, S. Kulkarni, J. Berry, I. Baker, S. Montzka, C. Sweeney, B. Miller, and E. Campbell 2017: Peak growing season gross uptake of carbon in North America is largest in the Midwest USA. *Nat. Clim. Change* manuscript NCLIM-16071204B, doi:10.11038/NCLIMATE3272.

2016

Lokupitiya, E., A.S. Denning, K. Schaefer, D. Ricciuto, R. Anderson, M.A. Arain, I. Baker, A.G. Barr, G. Chen, J.M. Chen, P. Ciais, D.R. Cook, M. Dietze, M. El Maayar, M. Fischer, R. Grant, D. Hollinger, C. Izaurralde, A. Jain, C. Kucharik, Z. Li, S. Liu, L. Li, R. Matamala, P. Peylin, D. Price, S.W. Running, A. Sahoo, M. Sprintsin, A.E. Suyker, H. Tian, C. Tonitto, M. Torn, H. Verbeeck, S.B. Verma, Y. Xue, 2016: Carbon and energy fluxes in cropland ecosystems: a model-data comparison. *Biogeochemistry*, doi:10.1007/s10533-016-021903.

Wang, Y., N.M. Deutscher, M. Palm, T. Warneke, J. Nothold, I. Baker, J. Berry, P. Suntharalingam, N. Jones, E. Mahieu, B. Lejeune, J. Hannigan, S. Conway, J. Mendonca, K. Strong, J.E. Campbell, A. Wolf, S. Kremser, 2016: Towards understanding the variability in biospheric CO₂ fluxes: using FTIR spectrometry and a chemical transport model to investigate the sources and sinks of carbonyl sulfide and its link to CO₂. *Atmos. Chem. Phys.*, 16, 2123-2138, doi:10.5194/acp-16-2123-2016.

2015

Commane, R. L.K. Meredith, I.T. Baker, J.A. Berry, J.W. Munger, S.A. Montzka, P.H. Templar, S.M. Juice, M.S. Zahniser, S.C. Wofsy, 2015: Seasonal fluxes of carbonyl sulfide in a mid-latitude forest. *P. Natl. Acad. Sci. USA*, 112(46), 14162-14167, doi:10.1073/pnas.1504131112.

Glatthor, N., M. Höpfner, I.T. Baker, J. Berry, J.E. Campbell, S.R. Kawa, G. Krysztofiak-Tong, A. Leyser, B.-M. Sinnhuber, G.P. Stiller, J. Stinecipher, T. von Clarmann, 2015: Tropical sources and sinks of carbonyl sulfide observed from space. *Geophys. Res. Lett.*, 42, 10082-10090, doi:10.1002/2015GL066293.

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Lee, J.-E., J.A. Berry, C. van der Tol, X. Yang, L. Guanter, A. Damm, I. Baker, C. Frankenberg, 2015: Simulations of chlorophyll fluorescence incorporated into the Community Land Model version 4. *Glob. Change. Biol.*, 21(9), 3469-3477, doi:10.1111/gcb.12948.

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2014

Christofferson, B.O., N. Restrepo-Coupe, M.A. Arain, I.T. Baker, B.P. Cestaro, P. Ciais, J.B. Fisher, D.R. Galbraith, X. Guan, L. Gulden, B.J.J.M van den Hurk, K. Ichii, H.M. Imbuzeiro, A.

Jain, N. Levine, G. Miguez-Macho, B. Poulter, B. Roberti, K. Sakaguchi A. Sahoo, K. Schaefer, M. Shi, H. Verbeeck, Z.-L. Yang, A.C. Araujo, B. Kruijt, A.O. Manzi, H.R. da Rocha, C. von Randow, M.N. Muza, J. Borak, M.H. Costa, L.G. Goncalves de Goncalves, X. Zeng, S.R. Saleska, 2014: Mechanisms of water supply and vegetation demand govern the seasonality and magnitude of evapotranspiration in Amazonia and cerrado. *Agric. For. Meteorol.*, doi:<http://dx.doi.org/10.1016/j.agrformet.2014.02.008>.

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Harper, A.B., I.T. Baker, A.S. Denning, D.A. Randall, D. Dazlich, M. Branson, 2013: Impact of evapotranspiration on dry season climate in the Amazon forest. *J. Clim.*, 27, 574-591, doi:10.1175/JCLI-D-13-00074.1.

Matheny, A.M., G. Bohrer, P. Stoy, I. Baker, A. Black, A. Desai, M. Dietze, C. Gough, V. Ivanov, K. Novick, K. Schäfer, H. Verbeeck, 2014: Characterizing the diurnal patterns of errors in the prediction of evapotranspiration by several land-surface models: an NACP analysis. *J. Geophys. Res.*, 119, 1458-1473, doi:10.1002/2014JG002623.

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Baker, I.T., H.R. da Rocha, N. Restrepo-Coupe, R. Stöckli, L.S. Borma, O.M. Cabral, A.O. Manzi, A.D. Nobre, S.C. Wofsy, S.R. Saleska, M.L. Goulden, S.D. Miller, F.L. Cardoso, A.S. Denning, 2013: Surface ecophysiological behavior across vegetation and moisture gradients in Amazonia. *Agric. For. Meteorol.*, 182-183, 177-188, doi:<http://dx.doi.org/10.1016/j.agrformet.2012.11.015>.

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de Goncalves, L.G., J.S. Borak, M.H. Costa, S.R. Saleska, I.T. Baker, N. Restrepo-Coupe, M.N. Muza, B. Poulter, H. Verbeeck, J. B. Fisher, M.A. Arain, P. Arkin, B.P. Cestaro, B.

Christoffersen, D. Galbraith, X. Guan, B.J.J.M. van den Hurk, K. Ichii, H.M. Acioli Imbuzeiro, A.K. Jain, N. Levine, C. Lu, G. Miguez-Macho, D.R. Roberti, A. Sahoo, K. Sakaguchi, K. Schaefer, M. Shi, W.J. Shuttleworth, H. Tian, Z.-L. Yang, X. Zeng, 2013: Overview of the Large-Scale Biosphere-Atmosphere Experiment in Amazonia Data Model Intercomparison Project (LBA-DMIP), *Agric. For. Met.*, 182-183, 111-127, doi:<http://dx.doi.org/10.1016/j.agrformet.2013.04.030>.

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Presentations

2023

Baker, I.T., Andrew E Schuh, David F Baker, Sourish Basu, Frederic Chevallier, Sean Crowell, Feng Deng, Andrew R Jacobson, Sajeev Philip, Junjie Liu, Helene Peiro, Christopher O'Dell, Brad Weir, A Scott Denning, Sarah Gallup, Katherine D Haynes and OCO-2 Flux MIP Team, 2023: Evolving Understanding of Amazonian Ecophysiology, E-Lightning Presentation, American Geophysical Union Annual Meeting, San Francisco CA, A44H-03.

Baker, I.T., A. Kaushik, L. Bruhwiler A.S. Denning, S. Gallup, 2023: Normal isn't good enough: Western US pine forests are accumulating stress. Poster presentation, NOAA Global Monitoring Laboratory 51st Global Monitoring Annual Conference, Boulder CO.

Gatti, Luiana V., Luciano Marani, Jennifer E Johnson, Joseph A Berry, Camilla Lima Cunha Ms., John B Miller, A Scott Denning, Ian T Baker, Caio Silvestre de Carvalho Correia, Stephane P. Crispim, Henrique L. G. Cassol Sr., Guilherme B. M. Machado, Egidio Arai, Lucas Domingues, J Elliott Campbell, Mary Whelan, Wu Sun, Ulrike Seibt and Andrew E Schuh, 2023: Using Routine Aircraft Profiles of CO₂ and COS to Evaluate the Changing Carbon Cycle in Amazonia, Oral Presentation, American Geophysical Union Annual Meeting, San Francisco CA, A32E-07

Schuh Andrew E., Jon Altenhofen, Ian T Baker, David Barnard, Louise Comas, Troy Magney, Joseph Michaud, Stephen M Ogle, Francis Ulep, Joshua Wenz, Kevin Yemoto, Huihui Zhang, Yao Zhang and Jose L Chavez, 2023: What Can Solar Induced Fluorescence (SIF) Tell Us About the Condition of Crops in Dryland Agricultural Sites? A Study Case at USDAs Limited Irrigation Research Farm (LIRF) in Greeley, CO, Oral Presentation, American Geophysical Union Annual Meeting, San Francisco CA, GC42B-08

2022

Baker, I.T. , A. Kaushik, L. Bruhwiler, B.M. Gillespie4, A.S. Denning, K.D. Haynes, 2022: Normal Isn't Good Enough: Western USA Pine Forests Are Accumulating Stress, Oral Presentation, American Geophysical Union Annual Meeting, Chicago IL, GC55A-02.

Feng, S., T. Lauvaux, K.J. Davis, C.A. Williams, Y. Zhou, K. Keller, Z. Barkley, D. Wesloh, A.E. Schuh, J. Liu, I.T. Baker, T. Oda, P.J. Rayner, 2022: How can we use comprehensive ensembles to improve regional carbon flux estimation? Oral Presentation, American Geophysical Union Annual Meeting, Chicago IL, A15C-03.

Hunt R., A. Newton, J. U'Ren, M. Nickerson, R. Commane, A. Cheng, I.T. Baker, L.K. Meredith, 2022: Physical and Chemical Properties of Alaskan Boreal Forest and Tundra Soils in Relation to Carbonyl Sulfide Fluxes, Poster Presentation, American Geophysical Union Annual Meeting, Chicago IL, B52I-0967.

Kaushik, A., J.B. Miller, A.R. Jacobson, L. Bruhwiler, S.E. Michel, K. Schuldt, K.D. Haynes, I.T. Baker, 2022: Advancing Understanding of Plant-Drought Responses in North American Ecosystems using Carbon Isotopic Discrimination in the Simple Biosphere Model, Oral Presentation, American Geophysical Union Annual Meeting, Chicago IL, GC55A-01.

Newton, A., J. U'Ren, M. Nickerson, R. Hunt, A. Cheng, R. Commane, I.T. Baker, L.K. Meredith, 2022: Drivers of OCS and CO₂ Surface Fluxes in Boreal and Arctic Biomes During the Alaskan Growing Season, Poster Presentation, American Geophysical Union Annual Meeting, Chicago

IL,B52I-0948.

2021

Still pandemic. I don't count zoom presentations.

2020

Pandemic. Let's just move on...

2019

Baker, I.T., 2019: The carbon cycle and greenhouse gases: How important is it for us to know how much photosynthesis there is on planet earth? Invited oral presentation, Blackburn College, Carlinville, IL, 10 April 2019.

Baker, I.T., A.S. Denning, A.B. Harper, S.M. Gallup, L. Prihodko, 2019: Lessons learned from 15 years studying Amazonian ecophysiology: Do we understand seasonality, and can we represent it in models? Oral presentation, FRaCCRs group, NOAA, Boulder CO, 26 July 2019.

Baker, I.T. A. Schuh, K. Davis, L. Kuai, J.E. Campbell, 2019: Testing the value of an Amazonian aircraft campaign similar to ACT-America. eLightning poster, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2019.

A. Kaushik, J.B. Miller, L. Hu, C. Sweeney, A.E. Andrews, S.A. Montzka, B.R. Miller, K.D. Haynes, I.T. Baker and A.S. Denning, 2019: Disentangling photosynthesis and respiration using simulated and observed carbon dioxide and carbonyl sulfide at the CARVE tower in boreal Alaska. eLightning poster, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2019.

Y.P. Shiga, J.A. Berry, A. Michalak, A.E. Andrews, B. Baier, I.T. Baker, J.E. Campbell, B.R. Miller, S.A. Montzka, C. Sweeney, K.W. Thoning, M. Whelan, C.A. Williams and Y. Zhou, 2019: Evaluating Component Level Carbon Fluxes at Regional Scales Over North America Using Atmospheric Observations of Carbon Dioxide and Carbonyl Sulfide. eLightning poster, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2019.

B. Byrne, J. Liu, M. Lee, I.T. Baker, K.W. Bowman, J.S. Kimball, C.E. Miller and N. Parazoo, 2019: Interannual variability in the terrestrial carbon cycle informed by atmospheric CO₂ measurements. eLightning poster, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2019.

M. Leonard, L. Bruhwiler, J.P. Dunne, E. Shevliakova, K.D. Haynes, I.T. Baker, A.S. Denning and E.J. Dlugokencky: 2019: Assessing an earth system model using data assimilation/flux-inversion models. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2019.

L.Hu, S.A. Montzka, A. Kaushik, K. McKain, C. Sweeney, J.B. Miller, A.E. Andrews, K.W. Thoning, B.R. Miller, I.T. Baker, J.E. Campbell, Y.P. Shiga, J. Henderson, T. Nehrkorn, M.E. Mountain, L.D. Schiferl and R. Commane, 2019: Gross primary production over the North American Arctic and Boreal region inferred from atmospheric carbonyl sulfide measurements. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2019.

2018

Baker, I.T., A.S. Denning, S. Feng, S. Pal, K.J. Davis, 2018: A43N-3317: Frontal Gradients of CO₂ as Sampled by ACT-America Flights and a Box Model. Poster Presentation, American Geophysical Union Fall Meeting, 10-14 December 2018, Washington DC.

Baker, I.T., L. Prihodko, P.J. Sellers, E. Vivoni, A.S. Denning, K.D. Haynes, A. Shreiner-McGraw, 2018: Landscape-Scale Soil Moisture Heterogeneity and Its Influence on Surface Fluxes at the Jornada LTER Site: Evaluating a New Model Parameterization for Subgrid-Scale Soil Moisture Variability. Oral Presentation, American Meteorological Society Annual Meeting, 8-11 January 2019, Austin TX.

Baker, I.T., P.J. Sellers, A.S. Denning, I. Medina, P. Kraus, K.D. Haynes, L. Prihodko, S. Biraud, 2018: A New Method for Calculating Sub-Grid Soil Moisture Variability and its Influence on Surface Flux: The BINS. PiersFest, 25-29 June, Fort Collins CO.

Baker, I.T. S. Gallup, K.D. Haynes, A.S. Denning, M. Cheeseman, A. Schuh, N. Geyer, D. Smith, 2018: Fun New Ways Were Using SIF to Learn About How the World Works. Oral Presentation, OCO-2 Science Team Meeting, 23-25 October, Boulder CO.

Cheeseman, M., A.S. Denning, I.T. Baker, K.D. Haynes, C. O'Dell, 2018: A43N-3312: Plant Productivity and Phenology in a Process-Driven Carbon Cycle Model. Poster Presentation, American Geophysical Union Fall Meeting, 10-14 December 2018, Washington DC.

Gallup, S. I.T. Baker, N. Geyer, A.S. Denning, 2018: B33C-03: Correspondence of Recent Precipitation in the Amazonian Rainforest with Satellite Measurements of Solar-Induced Fluorescence. Oral Presentation, American Geophysical Union Fall Meeting, 10-14 December 2018, Washington DC.

Kuai, L., C. Miller, K. Bowman, M. Lee, N. Parazoo, I.T. Baker, R. Commane, Z. Zeng, Y. Yung, 2018: A new evidence of significant underestimating of photosynthesis in the Alaskan Arctic. Poster Presentation, European Geophysical Union Annual Meeting, 9-13 April 2018, Vienna, Austria.

Ott, L., D. Schimel, C. O'Dell, B. Moore III, S. Crowell, D. Baker, I. Baker, K. Bowman, A. Chatterjee, A.S. Denning, K. Haynes, S. Kawa, C. Miller, D. O'Brien, S. Pawson, B. Poulter, A. Schuh, T. Taylor, 2018: AS3.17/BG1.28: NASA's Carbon Cycle OSSE Initiative - Informing future space-based observing strategies through advanced modeling and data assimilation. Poster Presentation, European Geophysical Union Annual Meeting, 9-13 April 2018, Vienna, Austria.

2017

Baker, I.T., L. Prihodko, E.R. Vivoni, A.S. Denning, 2017: B51G-1895: Landscape-scale soil moisture heterogeneity and its influence on surface fluxes at the Jornada LTER site: Evaluating a new model parameterization for subgrid-scale soil moisture variability. Poster presentation, American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans.

Baker, I.T. and many coauthors, 2017: Incorporating OCS and SIF Observations into Carbon Cycle Models. Invited oral presentation, Keck Institute for Space Studies, Next-Generation Approach for Detecting Carbon-Climate Feedbacks Workshop, 18-22 September 2017.

Baker, I.T., A.S. Denning, M. Phillips, M. Branson, D. Dazlich, C. DeMott, D. Randall, K. Haynes, M. Vertenstein, C. Craig, J. Edwards, 2017: Scale Dependence of Surface-Atmosphere

Coupling, and Potential Implications for Carbon-Climate Feedback. Oral Presentation, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, 21-25 August 2017.

Baker, I.T. P. Sellers, A.S. Denning, K.D. Haynes, I. Medina, P. Kraus, W. Berg, 2017: New Representation of Subgrid-Level Soil Moisture Heterogeneity in Surface Simulations. Oral Presentation, American Meteorological Society Annual Meeting, Seattle Washington, 23-26 January 2017.

Badgley, G., L.D.L. Anderegg, I.T. Baker, J.A. Berry, 2017: A new canopy integration factor. Oral presentation, American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans.

Cheeseman, M., A.S. Denning, I.T. Baker, 2017: A43C-2467: Using remote-sensing and the Simple Biosphere Model (SiB4) to analyze the seasonality and productivity of the terrestrial biosphere. Poster presentation, American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans.

Fagerstrom, I., I.T. Baker, S. Gallup, A.S. Denning, 2017: B21G-2042: Soil depth influence on Amazonian ecophysiology. Poster presentation, American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans.

Gallup, S., I.T. Baker, A.S. Denning, M. Cheeseman, K.D. Haynes, M. Phillips, 2017: B21G-2044: Evaluation metrics for simulations of tropical South America. Poster presentation, American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans.

Geyer, N.M., A.S. Denning, K.D. Haynes, I.T. Baker, A.S. Schuh, 2017: Robust Estimation of Long-lived Carbon Dioxide Flux Biases via SIF and NEE. Poster Presentation, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, 21-25 August 2017.

Haynes, K.D., R.C. Minaya, A.S. Denning, I.T. Baker, 2017: Grassland Productivity Response to the U.S. 2012 Drought: Analysis of Leaf Area Index in MODIS and the Simple Biosphere Model. Poster Presentation, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, 21-25 August 2017.

Hilton, T.W., M.E. Whelan, A. Zumkehr, S. Kulkarni, J.A. Berry, I.T. Baker, S.A. Montzka, C. Sweeney, B.R. Miller, U. Seibt, S.J. Smith, T. Launois, S. Belviso, L. Bopp, M. Laine, J.E. Campbell, 2017: Carbonyl sulfide constrains regional GPP spatial placement and industrial era global GPP historical trends. Oral Presentation, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, 21-25 August 2017.

Phillips, M., A.S. Denning, I. Baker, D. Randall, M. Branson, 2017: Effects of Implementing Multiple Scales in a Global Climate Model on the Partitioning of Water in the Vegetation Canopy and Simulated Photosynthesis. Poster Presentation, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, 21-25 August 2017.

Parazoo, N., K.W. Bowman, L. Kuai, J. Liu, M. Lee, I.T. Baker, J.A. Berry, K.J. Davis, T. Lavaux, J.P. DiGangi, C. Sweeney, 2017: A43C-2460: Multi-Species constraint of anthropogenic and biogenic processes over North America during ACT-America summer 2016 and 2017 aircraft campaigns. Poster presentation, American Geophysical Union Fall Meeting, 11-15 December 2017, New Orleans.

van Schaik, E., I. van der Velde, M.K. van der Molen, J.B. Miller, I. Baker, K. Haynes, W. Peters,

2017: Simultaneous assimilation of stable carbon isotopes in CO₂ and sun-induced fluorescence within a terrestrial biosphere model. Poster Presentation, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, 21-25 August 2017.

2016

Baker, I.T. and P.J. Sellers, 2016: Bridging the Soil Water Scale Gap in Land-Atmosphere Interactions. Oral Presentation, American Meteorological Society Annual Meeting, New Orleans LA, 13 Jan 2016.

Baker, I.T., A.S. Denning, D.A. Dazlich, K.D. Haynes, J.A. Berry, P.J. Sellers, J. Joiner, C. Frankenberg, P. Kraus, D.A. Randall, 2016: Multiscale Land-Atmosphere Interaction in Tropical Ecosystems. Poster Presentation, Department of Energy Environmental Systems Science Workshop, Potomac MD, 26-28 April 2016.

Baker, I.T., P.J. Sellers, A.S. Denning, I.D. Medina, 2016: New Representation of Cumulus Rainfall and Subgrid-Level Soil Moisture Heterogeneity in Regional Simulations. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 12-16 December 2016.

Denning, A.S., I.T. Baker, M. Phillips, M. Branson, D. Randall, 2016: Global Multiscale Modeling of Coupled Carbon-Climate Processes. Oral presentation, American Meteorological Society Annual Meeting, New Orleans LA, 11 Jan 2016.

Geyer, N.M., A.S. Denning, I.T. Baker, K.D. Haynes, 2016: Long-live and Robust Land-Atmosphere Flux Bias Estimation via SIF and NEE. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 12-16 December 2016.

Glatthor, Norbert, Michael Hpfner, Ian T. Baker, Joe Berry, Elliott Campbell, Stephan R. Kawa, Gisele Krysztofiak, Björn-Martin Sinnhuber, Gabriele Stiller, Jim Stinecipher, and Thomas von Clarmann, 2016: Poster presentation, European Geosciences Union General Assembly, Vienna Austria, 17-22 April 2016.

He, Wei, Huilin Chen, Ivar van der Velde, Arlyn Andrews, Colm Sweeney, Ian Baker, Weimin Ju, Ingrid van der Laan-Luijkx, Pieter Tans, and Wouter Peters, 2016: CarbonTracker-Lagrange: A model-data assimilation system for North American carbon flux estimates. Oral Presentation, European Geosciences Union General Assembly, Vienna Austria, 17-22 April 2016.

Kooijmans, Linda M.J. , Kadmiel Maseyk, Ulli Seibt, Timo Vesala, Ivan Mammarella, Ian T. Baker, Alessandro Franchin, Pasi Kolari, Wu Sun, Helmi Keskinen, Janne Levula, and Huilin Chen, 2016: Stomata-controlled nighttime COS fluxes in a boreal forest: implications for the use of COS as a GPP tracer. Oral Presentation, European Geosciences Union General Assembly, Vienna Austria, 17-22 April 2016.

Schuh, A.E., A.S. Denning, I.T. Baker, K.D. Haynes, N.M. Geyer, R. McKeown, 2016: Global Atmospheric Inversions of XCO₂ and Solar-Induced Fluorescence (SIF) from OCO-2. Oral presentation, American Geophysical Union Fall meeting, San Francisco CA, 12-16 December 2016.

Smith, D., A.S. Denning, I.T. Baker, K.D. Haynes, 2016: Understanding and modeling Tropical Grasslands Using Remotely Sensed Fluorescence and Soil Moisture. Poster presentation, American Meteorological Society Annual Meeting, New Orleans LA, 11 Jan 2016.

Smith, D., A.S. Denning, I.T. Baker, K.D. Haynes, 2016: Understanding and modeling Tropical

Grasslands Using Remotely Sensed Fluorescence and Soil Moisture. Poster presentation, American Geophysical Union Fall meeting, San Francisco CA, 12-16 December 2016.

Wang, Yuting, Julia Marshall, Mathias Palm, Nicholas Deutscher, Christian Roedenbeck, Thorsten Warneke, Justus Notholt, Ian Baker, Joe Berry, Parvatha Suntharalingam, Nicholas Jones, Emmanuel Mahieu, Bernard Lejeune, James Hannigan, Stephanie Conway, Kimberly Strong, Elliott Campbell, Adam Wolf, and Stefanie Kremser, 2016: Using NDACC column measurements of carbonyl sulfide to estimate its sources and sinks. Oral Presentation, European Geosciences Union General Assembly, Vienna Austria, 17-22 April 2016.

Whelan, M., B.W. LaFranchi, R. Bambha, H.A. Michelsen, M.L. Fischer, H.D. Graven, I.T. Baker, T. Guilderson, J.E. Campbell, 2016: Improved Carbon Flux Observations over Urban Areas Using Carbonyl Sulfide (COS) to Differentiate Contributions from Biosphere. Oral Presentation, American Geophysical Union Fall meeting, San Francisco CA, 12-16 December 2016.

2015

Baker, I.T., 2015: Land-Atmosphere Interaction and its Role in Global Energy, Water and Carbon Cycles. Invited oral presentation, University of Northern Colorado, Greeley CO, 30 Oct 2015.

Baker I.T., P. Sellers, A.S. Denning, D. Randall, I. Medina, P. Kraus, 2015: Modeling the effects of variable soil moisture. ESA Earth Observation for Soil Water Studies workshop, Frascati Italy, 22 October 2015.

Baker, I., and coauthors 2015: Constraining global photosynthesis: can we use novel methods to increase our understanding of vegetation behavior? Invited oral presentation, University of Wageningen, Wageningen Netherlands, 13 Oct 2015.

Baker, I., A. Schuh, K. Haynes, A.S. Denning, N. Geyer, 2015: Optimize surface CO₂ flux with fluorescence and dXCO₂. Poster presentation, 11th International Workshop on Greenhouse Gas Measurement (IWGGMS), Pasadena CA, 16-18 June 2015

Baker, I., K. Haynes, A.S. Denning, D. Dazlich, M. Branson, J. Berry, C. Frankenberg, J. Joiner, D. Randall, J.-E. Lee, A. Harper, 2015: The Tropical Terrestrial Tipping Point. Poster Presentation, NASA Carbon Cycle and Terrestrial Ecology meeting, Bethesda MD, 20-24 April 2015.

Baker, I., P.J. Sellers, A.S. Denning, D. Randall, I. Medina, P. Kraus, 2015: A new method for representing subgrid heterogeneity in land models. Oral presentation, NCAR Land Model Working Group Meeting, 02-05 March 2015.

Baker, I., P.J. Sellers, A.S. Denning, D. Randall, I. Medina, P. Kraus, 2015: A new method for representing subgrid heterogeneity in land models. Oral presentation, CMMAP winter team meeting, La Jolla CA, 13-15 January 2015.

Baker, I., D. Dazlich, A. Harper, M. Branson, A.S. Denning, D. Randall, 2015: Multiscale Land-Atmosphere Coupling in a Tropical Environment. Poster presentation, CMMAP annual team meeting, Fort Collins CO, 04-06 August 2015.

Baker, I., J. Berry, A. Harper, A.S. Denning, J.-E. Lee, J. Joiner, C. Frankenberg, 2015: Understanding tropical forest response to seasonal and interannual variability: The Goldilocks problem. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA,

14-18 December 2015.

Berry, J.A., I. Baker, E. Campbell, C. van der Tol, A. Kornfeld, K. Guan, 2015: Can we bring discipline to carbon cycle modeling using observations of solar induced fluorescence and carbonyl sulfide? Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Berry, J.A., J.E. Campbell, I. Baker, M. Whelan, T. Hilton, 2015: Carbonyl Sulfide: is it an isotope of CO₂ on Steroids? Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Chen, H., He. W., W. Peters, A. Andrews, A. Jacobson, C. Sweeney, I. Baker, I. van der Laan-Luijkx, I. van der Velde, P. Tans, 2015: A Lagrangian Assimilation System for North American Carbon Flux Estimates. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Crisp, D., A. Eldering, C. O'Dell, B. Fisher, D. Wunch, P. Wennberg, G. Osterman, L. Mandrake, V. Payne, V. Natraj, C. Frankenberg, T. Taylor, J. Worden, A. Bloom, R. Nelson, D. Fu, A. Braverman, A. Chatterjee, I. Baker, C. Avis, T. Livermore, 2015: Preliminary Results from the first year of operations of the NASA Orbiting Carbon Observatory-2 (OCO-2). Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Curry, R., S. Denning, K. Haynes, I. Baker, 2015: Spatial and interannual variability of drought stress in U.S. grasslands. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Medina, I., I. Baker, S. Denning, D. Dazlich, 2015: Simulating the 2012 High Plains Drought using Three Single Column Models. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Wehr, R., R. Commane, I. Baker, J. Munger, S. Saleska, S. Wofsy, 2015: What controls the Net Forest-Atmosphere exchange of Carbonyl Sulfide? Results from 2 years of eddy covariance observations and SiB model simulations. Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 14-18 December 2015.

Kuai L., John Worden, Elliott Campbell, Susan Kulawik, Meemong Lee, Stephen Montzka, Joe Berry, Ian Baker, Scott Denning, Randy Kawa, Huisheng Bian, and Yuk Yung: Quantification of A Tropical Missing Source From Ocean For The Carbonyl Sulfide Global Budget. Poster Presentation, European Geophysical Union General Assembly 2015, Vienna Austria, 12-17 April 2015.

Wang Y., Christof Petri, Mathias Palm, Thorsten Warneke, Ian Baker, Joe Berry, Parvatha Suntharalingam, Elliott Campbell, Adam Wolf, Nick Deutscher, and Justus Notholt: Using Carbonyl Sulfide column measurements and a Chemical Transport Model to investigate variability in biospheric CO₂ fluxes. Poster Presentation, European Geophysical Union General Assembly 2015, Vienna Austria, 12-17 April 2015.

2014

Baker, I.T., M. Branson, D. Dazlich, D. Randall, A.S. Denning, C. Craig, J. Edwards, M. Vertenstein, B. Eaton, et al., 2014: SuperParameterized CESM: Multi-Instance Land. NCAR

LMWG meeting, Boulder CO, 24-26 Feb 2014.

Baker, I.T., J.A. Berry, C. Frankenberg, J. Joiner, C. van der Tol, J.-E. Lee, A.S. Denning, 2014: simulations of solar-induced fluorescence using the Simple Biosphere Model (SiB) evaluated against data from satellites. Oral Presentation, European Space Agency (ESA) Solar Induced Fluorescence workshop, Paris, France, 23-25 April 2014.

Baker, I.T., 2014: High Park Fire, 2012: Drought, disturbance and recovery. Oral presentation, Conservation Leadership Through Learning (CLTL) workshop, Colorado State University, Fort Collins CO, 19 September 2014.

Baker, I.T., J. Berry, C. Frankenberg, J. Joiner, C. van der Tol, J.-E. Lee, A.S. Denning, 2014: Simulations of solar induced fluorescence compared to observations from GOSAT and GOME-2 satellites. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 15-19 December 2014.

Commane, R., I. Baker, J. Berry, J.W. Munger, S. Wofsy, 2014: Understanding processes contributing to the ecosystem flux of carbonyl sulfide and carbon dioxide in a mixed forest. Oral presentation, American Geophysical Union Fall Meeting, San Francisco CA, 15-19 December 2014.

Haynes, K., I. Baker, A.S. Denning, 2014: Global carbon flux and biomass pools simulated using SiB4. Poster Presentation, NASA Carbon Monitoring System (CMS) workshop, Bethesda MD, 12-14 November 2014.

Lee, J.-E., J. Berry, C. van der Tol, L. Guanter, A. Damm, I. Baker, C. Frankenberg, 2014: Calculations for chlorophyll fluorescence incorporated into the community land model. Oral presentation, American Geophysical Union Fall Meeting, San Francisco CA, 15-19 December 2014.

O'Dell, C., H. Lindqvist, M. Cheeseman, A. Schuh, D. Baker, I. Baker, K.D. Haynes, A.S. Denning, G. Collatz, F. Chevalier, C. Frankenberg, 2014: Evaluation of land-surface models with GOSAT carbon dioxide measurements. Oral presentation, American Geophysical Union Fall Meeting, San Francisco CA, 15-19 December 2014.

Sellers, P.J., I.T. Baker, 2014: A new scaling approach for calculating realistic energy, water, and carbon fluxes from GCM grid areas. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 15-19 December 2014.

Wang, Y., M. Palm, N. Deutscher, T. Warneke, J. Nothhold, I. Baker, J. Berry, P. Suntharalingam, J.E. Campbell, A. Wolf, 2014: Using carbonyl sulfide column measurements and a chemical transport model to investigate variability in biospheric CO₂ fluxes. Poster presentation, American Geophysical Union Fall Meeting, San Francisco CA, 15-19 December 2014.

2013

Baker, I.T., D.A. Dazlich, A.B. Harper, M.D. Branson, D.A. Randall, A.S. Denning, 2013: Land-Atmosphere interaction across multiple scales. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2013.

Baker, I.T., 2013: Land-Atmosphere Interaction: modeling, and some neat recent stuff, 2013: invited oral presentation, VII Workshop Brasileiro de Micrometeorologia, Santa Maria, Rio Grande do Sul, Brazil, 20-22 November 2013.

Baker, I.T., J.A. Berry, C. Frankenberg, J.-E. Lee, A.S. Denning, 2013: Constraining Estimates of

Global Photosynthesis with Observations of Chlorophyll Fluorescence. Poster presentation, 9th International Carbon Dioxide Conference, Beijing China, 3-7 June 2013.

Baker, I.T. et al., 2013: CMMAP Land Activities. Oral presentation, CMMAP Team Meeting, Boulder CO, 22 January.

Baker, I.T., J.A. Berry, J.-E. Lee, C. Frankenberg, A.S. Denning, 2013: Constraining Simulated Photosynthesis with Fluorescence Observations. Poster Presentation, North American Carbon Project (NACP) All-Investigator's meeting, Albuquerque, New Mexico, February 4-7 2013.

Haynes, K.D. I.T. Baker, A.S. Denning, R. Stöckli, K.M. Schaefer, E.Y. Lokupitya, 2013: Global, self-consistent carbon flux and pool estimates utilizing the Simple Biosphere Model (SiB4). Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2013.

Bowman, K.W., J. Liu, M. Lee, K.R. Gurney, D. Menemenlis, H. Brix, C.N. Hill, A.S. Denning, K.D. Haynes, I.T. Baker, D.K. Henze, N. Bousserez, G. Marland, E. Marland, C.A. Badurek, 2013: Estimates of carbon cycle surface fluxes from the NASA Carbon Monitoring System Flux Pilot Project. Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2013.

Ballantyne, A.P., J.B. Miller, D.R. Bowling, P.P. Tans, I.T. Baker, 2013: Testing earth system models with earth system data: Using C isotopes in atmospheric CO₂ to probe stomatal response to future climate change. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 9-13 December 2013.

Haynes, K., A.S. Denning, I. Baker, et al, 2013: Integrating Prognostic Phenology and Carbon Pools in the Simple Biosphere Model (SiB4) to Estimate Fluxes, Biomass, and Stocks. Poster presentation, 9th International Carbon Dioxide Conference, Beijing China, 3-7 June 2013.

Chen, H., S.A. Montzka, A.E. Andrews, C. Sweeney, A.R. Jacobson, G. Petron, M. Trudeau, B.R. Miller, A. Karion, M. Jung, C. Gerbig, J.E. Campbell, M. Abu-Nasar, J.A. Berry, I.T. Baker, T. Nehorn, J. Eluszkiewicz, P.P. Tans, 2013: Improving North American gross primary production (GPP) estimates using atmospheric measurements of carbonyl sulfide (COS). Abstract submitted to European Geophysical Union.

2012

Baker, I.T., J.A. Berry, J.-E. Lee, C. Frankenberg, A.S. Denning, 2012: Constraining simulated photosynthesis with fluorescence observations. Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Baker, I.T., 2012: Colorado weather in 2012: Reality vs. climatological expectations. Oral presentation, Colorado Global Climate Conference, Fort Collins CO, 29 October 2012.

Baker, I.T., A.S. Denning, 2012: The global carbon cycle, an overview. Oral presentation, Keck Institute for Space Studies Fluorescence Workshop, Pasadena CA, 26-31 August 2012.

Baker, I.T., J.A. Berry, J.-E. Lee, 2012: Integrating fluorescence parameterizations into biophysical models. Oral presentation, Keck Institute for Space Studies Fluorescence Workshop, Pasadena CA, 26-31 August 2012.

Baker, I.T., A.B. Harper, A.S. Denning, R. Stöckli, 2012: Land-atmosphere interaction in Amazonia, Poster presentation, Colorado State University Atmospheric Science Department 50th

Anniversary Celebration, Fort Collins CO, 13 July 2012.

Baker, I.T., 2012: The carbon cycle and climate change. Guest lecture, Philosophy 218, Colorado Mountain College, 2 April 2012.

Abu-Naser, M., J.E. Campbell, J.A. Berry, U. Seibt, K.S. Maseyk, M.S. Torn, S.C. Biraud, M.L. Fisher, D. P. Billesbach, I.T. Baker, G.J. Collatz, H. Chen, S.A. Montzka, C. Sweeney, 2012: Scaling from flux towers to ecosystem models: Regional constraints on GPP from atmospheric carbonyl sulfide. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Berry, J.A., I.T. Baker, D.A. Randall, P.J. Sellers, 2012: The soil-plant-atmosphere system - Past and present. Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Chen, H., S.A. Montzka, A.E. Andrews, C. Sweeney, A.R. Jacobson, G. Petron, M. Trudeau, B.R. Miller, A. Karion, M. Jung, C. Gerbig, J.E. Campbell, M. Abu-Nasar, J.A. Berry, I.T. Baker, T. Nehorn, J. Eluszkiewicz, P.P. Tans, 2012: Assessment of North America photosynthetic up of CO₂ through simulations of COS in a Lagrangian particle dispersion model framework. Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Fisher, J.B., M. Sikka; W.C. Oechel; C.D. Koven; D.N. Huntzinger; A. Ahlstrom; M.A. Arain; I.T. Baker; J.M. Chen; P. Ciais; C.D. Davidson; M.C. Dietze; B. ElMasri; D.J. Hayes; C. Huntingford; A.K. Jain; M.R. Lomas; B. Poulter; D.T. Price; A.K. Sahoo; K.M. Schaefer; H. Tian; E. Tomelleri; H. Verbeeck; N. Viovy; N. Zeng; C.E. Miller, 2012: The state of land surface model uncertainty for the Alaskan arctic. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Haynes, K.D., I.T. Baker, A.S. Denning, R. Stöckli, K.M. Schaefer, E. Lokupitya, 2012: Utilizing field campaign, flux tower, and satellite data to improve simulated carbon fluxes and pools in the Simple Biosphere Model (SiB4). Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Orescanin, B., A.S. Denning, I.T. Baker, N.P. Hanan, 2012: Meteorological determinants of growing season onset in grassland. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

Parazoo, N., K.W. Bowman, C. Frankenberg, J.-E. Lee, J.B. Fisher, J. Worden, D.B. Jones, J.A. Berry, G.J. Collatz, I.T. Baker, M. Jung, J. Liu, 2012: Space based observations of Amazon carbon cycle. Oral Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

A.E. Schuh, D.F. Baker, R. McKeown, C.D. O'Dell, I.T. Baker, A.S. Denning, 2012: Atmospheric inversions of GOSAT satellite XCO₂ data using a GeosChem-based EnKF system. Poster Presentation, American Geophysical Union Fall Meeting, San Francisco CA, 3-7 December 2012.

2011

Baker, I.T., A.S. Denning, R. Stöckli, 2011: North American Gross Primary Productivity: Regional Characterization and Interannual Variability. Poster presentation, North American Carbon Project (NACP) all-investigators meeting, New Orleans, Louisiana, 01-04 February 2011.

Baker, I.T., A.B. Harper, J.A. Berry, A.S. Denning, 2011: Radiation variability and Ecosystem Behavior at Two Forest Sites in Brazil. Oral Presentation, AGU Fall Meeting, San Francisco CA.

Baker, I.T., 2011: Diffuse Radiation and Physiological Response in a Tropical Forest. Oral Presentation, Land Model Working Group, Community Ecosystem Model Workshop, Breckenridge CO.

Ballantyne, A.P., J.B. Miller, I.T. Baker, I. van der Velde, P.P. Tans, W. Peters, J.W. White, 2011: Hydrologic Constraints on Future Carbon Assimilation by the Terrestrial Biosphere. Oral Presentation, AGU Fall Meeting, San Francisco CA.

Berry, J.A., I.T. Baker, K. Stimler, J.E. Campbell, S.A. Montzka, D. Yakir, 2011: The Link Between GPP and the Atmospheric Concentration of Carbonyl Sulfide (OCS). Invited Oral Presentation, AGU Fall Meeting, San Francisco CA.

Chen, H., B. Petron, M.E. Trudeau, A. Karion, F.T. Koch, R. Kretschmer, C. Gerbig, J.E. Campbell, J.A. Berry, I.T. Baker, T. Nehrkorn, J. Eluszkiewicz, B.R. Miller, S.A. Montzka, A.R. Jacobson, C. Sweeney, A.E. Andrews, P.P. Tans, 2011: Estimating carbon fluxes for North America from a joint inversion for CO₂ and COS using STILT. Invited Oral Presentation, AGU Fall Meeting, San Francisco CA.

Denning, A.S., C.W. O'Dell, D.F. Baker, N. Parazoo, R. McKeown, I.T. Baker, S.R. Kawa, S.C. Doney, 2011: Simulation and Observation of Global Atmospheric CO₂ from 2009-2010. Poster Presentation, AGU Fall Meeting, San Francisco CA.

Harper, A.B., I.T. Baker, A.S. Denning, R.A. Fisher, D. Markewitz, P. Meir, 2011: Drought Tolerance in the Equatorial Amazon Forest: Implications for Ecosystem Models. Poster Presentation, AGU Fall Meeting, San Francisco CA.

Haynes, K.D., I.T. Baker, A.S. Denning, R. Stöckli, E.Y. Lokupitya, 2011: Impacts of Prognostic Phenology and Agriculture on the Seasonal Cycle of Carbon Fluxes. Poster Presentation, AGU Fall Meeting, San Francisco CA.

Shiach, I., I.T. Baker, A.S. Denning, 2011. Evaluating the Response of the Terrestrial Biosphere to Significant Drought. Poster Presentation, AGU Fall Meeting, San Francisco CA.

2010

Baker, I.T., 2010: Thoughts on Savanna Modeling. Oral Presentation, National Center for Atmospheric Research Land Model Working Group Meeting (NCAR/LMWG), 9 February 2010.

Baker, I.T., A.S. Denning, P. Lawrence, 2010: Savanna Modeling: Present Shortcomings, Future Directions. Oral Presentation, NASA-Savanna Remote Sensing Workshop, Colorado State University, Fort Collins, CO, 2-4 March 2010.

Baker, I.T., A.B. Harper, A.S. Denning, R. Stockli, 2010: Biophysics, Spatial Extent, and Interannual Variability of the Transition Forest (Cerradao): Oral Presentation, 2010 AGU Meeting of the Americas, Foz do Iguassu, Brazil.

Baker, I.T. A.B. Harper, A.S. Denning, R. Stockli, 2010: Amazon Basin-Scale Ecophysiology and Variability: Light- versus Water-Limitation. Oral Presentation, 2010 AGU Meeting of the Americas, Foz do Iguassu, Brazil.

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