Jan Kleissl
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University of California, San Diego
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Education

PhD. Johns Hopkins University, Department of Geography and Environmental Engineering, Baltimore, MD, 2004, Advisors: Marc B. Parlange, Charles Meneveau,

M.Sc. University of Stuttgart, Stuttgart, Germany, 2001, Water Resources Engineering and Management, Advisor: Prof. Dr.-Ing. Habil. Dr. rer. nat. A. Bardossy

Dipl. Ing. ('Diplom Ingenieur' = graduate engineer), University of Stuttgart, Stuttgart, Germany, 2000, Environmental Engineering (Umweltschutztechnik), Advisor: Prof. Dr. h.c. Dr.-Ing. Helmut Kobus, PhD.

Employment

Postdoctoral Fellow, Michigan Technological University, Advisor: Richard Honrath, 2004 – 2005, Field-experimental and numerical study of upslope and downslope flow for source attribution of ground-based trace-gas measurements.
Postdoctoral Fellow, New Mexico Tech, Advisor: Jan Hendrickx, 2006, Use of satellite imagery with scintillometer measurements to estimate evapotranspiration

Awards and Fellowships

- **2019 Jacobs School of Engineering Faculty of the Year**
- **2014 Negin Nazarian Best Student Presentation, 11th Symposium on the Urban Environment**
- **2013 Best paper award in "Solar Energy" (Reference #44)**
- **2009 NSF CAREER Award**
- **2008 Trendsetters award by Public Works Magazine**
- **2008 Hellman Fellow** for tenure-track faculty of great promise
- **2008 UCSD Sustainability Award**
- **2004 UCAR Award for Outstanding Publication (Reference #3)**
- **Student Paper Award:** 15th Symposium on boundary layers and turbulence, American Meteorological Society, Wageningen, The Netherlands, July 2002

Grants (active in large font)

- J. Kleissl and J. Hendrickx, *Validation and improvement of remote sensing ET algorithms in mountainous regions*, USGS National Institute of Water Resources (NIWR), 2006-2008, $149,589
- J. Kleissl (PI) and P.F. Linden, *Decision-Making using real-time observations for environmental sustainability (DEMROES)*, UCSD Facilities Management and Environment & Sustainability Initiative, 2007-2008, $46,200
- J. Kleissl (PI), *Coupling Between Skin Temperature and Evapotranspiration*, **National Science Foundation**, 2007-2008, $48,000
- M., P.F. Linden, and J. Kleissl (co-PI), *Personal perception of air pollution in the urban environment,* Set2 UK University consortium, 2008, $40,000
- J. Kleissl (PI) and N. Lieven, *Optimizing sustainable resource use in minigrids using wireless sensor networks and decision algorithms,* Set2 UK University consortium, 2008, $40,000
- J. Kleissl (PI) and C. Watts, *Testing models for Evapotranspiration using Large Aperture Scintillometers*, University of California Mexico-US program, 2008-2009, $25,000
- Delson, J. Kleissl (co-PI) et al., *Microprocessor Upgrade for Mechanical and Environmental Engineering Courses*, UCSD, 2008, $7,500
- J. Kleissl, *Radiative Modeling of Urban Heat Islands Using Wireless Sensor Network Data*, Hellman *Foundation, 2008-2009, $59,643*

- Joseph Ford, Farrokh Najmabadi, J. Kleissl (co-PI)*, California Solar Energy Collaborative, $305,000, California Energy Commission, 2009-2012*
- Hal Slater, J. Kleissl (Investigator), *Geothermal Water Heater*, California Energy Commission Energy Innovations Small Grant, $95,000, 12/2011 – 9/2012
- J. Kleissl, *Solar Forecasting for Energy Storage Applications*, Sanyo Electric Corporation, $749,000, 2010-2013
- J. Kleissl, *Total Sky Imager Testing for Solar Forecasting at Sempra Generation 48 MW PV Plant*, National Renewable Energy Laboratory, $128,820, 2011-2012
- J. Kleissl, *CAREER: Green Engineering of Urban Areas*, **National Science Foundation**, $407,449, 2009-2014
- Washom, B., J. Kleissl (co-PI), *Improved Modeling Tools Development for High Penetration Solar*, **Department of Energy**, $2,402,069, 2009-2013
- J. Kleissl, *Improving Economics of Solar Power Through Resource Analysis, Forecasting, and Dynamic System Modeling*, **California Public Utilities Commission Solar Initiative**, $548,148, 2011-2013
- J. Kleissl, *Improving remote sensing algorithms for evapotranspiration using Large Aperture Scintillometry*, **NASA**, $349,916, 2010-2013
- J. Kleissl (PI), B. Washom, *Smart-grid research and demonstration*, **California Energy Commission**, $2,858,000, 7/2011 – 3/2015
- Enernex, J. Kleissl (co-PI), Utility Scale Renewable Energy, **California Energy Commission**, $442,136, 8/2011 – 3/2014
- AWS Truepower, J. Kleissl (Investigator), Utility Scale Renewable Energy, **California Energy Commission**, $450,000, 8/2011 – 3/2014
- J. Kleissl, *California Solar Energy Collaborative*, $144,994, **California Energy Commission**, 7/2012-6/2014
- J. Kleissl, *High-fidelity solar forecasting demonstration for grid-integration*, **California Public Utilities Commission Solar Initiative**, $1,548,148, 2012-2014
- Sonia Martinez, J. Kleissl (co-PI), *Optimal sizing and control of distributed storage devices in grid-connected photovoltaic systems*, **National Science Foundation**, $449,720, 2013-2015
- J. Kleissl, *Energy-Efficient Refrigerator*, **US Department of Energy** (subcontract through Lawrence Berkeley National Laboratory), $40,000, 9/2013 - 6/2014.
- M. Bratton, J. Kleissl (co-PI), *Sustaining Interest in Science, Technology, Engineering, and Research in Society*, **National Science Foundation**, $800,000, 2013 – 2017.
- J. Kleissl, *Cloud Speed Sensor*, **California Energy Commission**, $95,000, 10/2013 – 9/2014 PI (100%)
- J. Kleissl (PI), Carlos Coimbra, *Systemwide solar and net load forecasting*, **San Diego Gas & Electric**, $80,000, 4/2014 – 12/2014.
- J. Kleissl (PI), Carlos Coimbra, Raymond de Callafon, Bill Torre, *Comprehensive Grid-Integration of Solar Power for SDG&E*, **California Public Utilities Commission** Solar Initiative, $1,057,050, 2014 - 2016
- J. Kleissl, *Solar Forecasting and Storage Control to Mitigate Large Ramps*, **California Public Utilities Commission** Solar Initiative, $95,000, 2014-2015.
- J. Kleissl (PI), Byron Washom, *Solar forecast based optimization of distributed energy resources in the LA basin and UC San Diego microgrid*, **California Energy Commission**, $1,000,000, 2015-2018.
- J. Kleissl (co-PI), *Cool Walls*, **California Energy Commission** subcontract through Lawrence Berkeley National Lab, $115,543 (UCSD share), 2015-2018.
- J. Kleissl (PI), Developing a Comprehensive, SystemWide Forecast to Support High-Penetration Solar, **California Energy Commission** subcontract through Clean Power Research., $99,000 (UCSD Share), 2017-2020
- J. Kleissl (PI), Byron Washom, *Intelligent Electric Vehicle Integration: INVENT*, **California Energy Commission** subcontract through Nuvve Corp., $1,211,808 (UCSD Share), 2017-2020.
- J. Kleissl (PI), SemperGRID: *Phase II Scale-Up and Business Case Demonstration of Advanced Microgrid Deployment at Marine Corps Air Station Miramar*, $5,000,000, **California Energy Commission**, 2018 - 2023
- J. Kleissl (site PI), The Port of San Diego Microgrid, $367,000 (UCSD share), **California Energy Commission**, 2018 - 2023

Editorial Activities

Deputy Editor, Journal of Renewable and Sustainable Energy (2019 - now)
Subject Editor in Chief for Solar Resources and Energy Meteorology – Solar Energy (2014 – 2018)
Associate Editor – Urban Climate (2013-2015)
Book Editor: Solar Resource Assessment and Forecasting, Elsevier, 2013

Publications – accepted in peer-reviewed journals

1. **Kleissl, J.**, C. Meneveau, and M.B. Parlange, 'On the magnitude and variability of subgrid-scale eddy-diffusion coefficients in the atmospheric boundary layer,' *J. Atmospheric Sciences,* 60, 2372-2388, 2003
2. **Kleissl, J.**, M.B. Parlange, and C. Meneveau, 'Field experimental study of dynamic Smagorinsky models in the atmospheric surface layer,' *J. Atmos. Sci.,* 61, 2296-2307, 2004
3. Horst, T.W., **J. Kleissl**, D.H. Lenschow, C. Meneveau, C.-H. Moeng, M.B. Parlange, P.P. Sullivan, and J.C. Weil, 'Field observations to obtain spatially-filtered turbulence fields from transverse arrays of sonic anemometers in the atmospheric surface layer,' *J. Atmos. Sci.*, 61, 1566-1581, 2004
4. Pahlow, M, **J. Kleissl**, M.B. Parlange, J.M. Ondov, and D. Harrison, 'Atmospheric boundary layer dynamics as observed during a haze event due to forest fire smoke,' *Boundary Layer Meteorology,* 114 (1), 53-70, 2005
5. A. Sapkota, J. M. Symons, **J. Kleissl**, L. Wang, M.B. Parlange, J. Ondov, P.A. Eggleston, T.J. Buckley, 'Impact of the 2002 forest fires on PM air quality in Baltimore City,' *Environmental Science and Technology,* 39 (1): 24-32, 2005
6. R.E. Honrath, R.C. Owen, M. Val Martin, J.S. Reid, K. Lapina, P. Fialho, M.P. Dziobak, **J. Kleissl**, D.L. Westphal, 'Regional and hemispheric impacts of anthropogenic and biomass burning emissions on summertime CO and O_3 in the North Atlantic lower free troposphere,' *J. Geophysical Res.–Atmospheres,* 109, D24310, 2005
7. **Kleissl, J.**, V. Kumar, M.B. Parlange, and C. Meneveau, 'Numerical study of dynamic Smagorinsky models in Large Eddy Simulation of the atmospheric boundary layer: Validation in stable and unstable conditions,' *Water Resources Research,* 42 (6), W06D10, 2006
8. Kumar, V., **J. Kleissl**, M.B. Parlange, and C. Meneveau, 'Large-Eddy Simulation of the diurnal cycle of the turbulent Atmospheric Boundary Layer: Atmospheric stability and scaling issues,' *Water Resources Res*., 42(6), W06D09, 2006
9. **Kleissl, J.**, R.E. Honrath, D.V. Henriques, 'Analysis and application of Sheppard's airflow model to predict mechanical orographic lifting and the occurrence of mountain clouds,' *J. Applied Meteorology, 45(10), pp. 1376–1387, 2006*
10. Park, S.S., **J. Kleissl**, D. Harrison, N.P. Nair, V. Kumar, J. Ondov, 'Investigation of $PM_{2.5}$ Episodes Using Semi-Continuous instruments at the Baltimore Supersite,' *Aerosol Sci. Tech., 40 (10): 845-860, 2006*
11. **Kleissl, J.**, R.E. Honrath, M.P. Dziobak, D. Tanner, M. Val-Martin, R.C. Owen, D. Helmig, 'The occurrence of upslope flows at the Pico mountaintop atmospheric observatory: a case study of orographic flows on small, volcanic islands,' *J. of Geophysical Research – Atmospheres,* 112, D10S35, doi:10.1029/2006JD007565, 2007
12. Van Hout, R., W. Zhu, L. Luznik, J. Katz, **J. Kleissl**, M.B. Parlange: PIV measurements in the atmospheric boundary layer within and above a mature corn canopy. Part A: statistics and small scale isotropy,' *J. Atmos. Sci., 64(8), 2805-2824, 2007*
13. **Kleissl, J.**, J. Gomez, S.-H. Hong, J.M.H. Hendrickx, T. Rahn, W.L. Defoor, 'Large Aperture Scintillometer Intercomparison Study', *Bound.-Layer Meteorol., 128(1), 133-150, 2008*
14. **Kleissl, J.,** S.-H. Hong, J.M.H. Hendrickx, 'New Mexico Scintillometer Network in Support of Remote Sensing, and Hydrologic and Meteorological Models', *Bull. Amer. Meteorol. Society,* 90(2): 207-218, 2009
15. **Kleissl, J.**, C. Watts, J. Conrod, S. Naif, 'Large Aperture Scintillometer Intercomparison Study - continued', Boundary Layer Meteorology, **130**: 437–443, 2009
16. Zeweldi, D.A., M. Gebremichael, J. Wang, T. Sammis, **J. Kleissl** and D. Miller, Intercomparison of Sensible Heat Flux from Large Aperture Scintillometer and Eddy Covariance methods: Field Experiment over a Homogeneous Semiarid Region, Boundary-Layer Meteorol., DOI: 10.1007/s10546-009-9460-9, 2010
17. Yaghoobian N, **Kleissl J**, Krayenhoff ES, 'Modeling The Thermal Effects of Artificial Turf on the Urban Environment', *J. Applied Meteorology and Climatology*, 49(3), 332–345, 2010
18. Lave M, **Kleissl J**, 'Solar Intermittency of Four Sites Across the State of Colorado', *Renewable Energy*, 35:2867-2873, 2010
19. Nottrott A, **Kleissl J**, Validation of the SUNY NSRDB global horizontal irradiance in California, *Solar Energy*, 84:1816–1827, 2010
20. Garai A, **Kleissl J**, Llewellyn-Smith SG, Estimation of biomass heat storage using thermal infrared imagery: Application to a walnut orchard, *Boundary-Layer Meteorology*, 137:333–342, 2010
21. Lave M, **Kleissl J**, Optimum fixed orientations and benefits of tracking for capturing solar radiation in the continental United States, *Renewable Energy*, 36:1145-1152, 2011

22. **Kleissl J**, O.K. Hartogensis, J.D. Gomez, Test of scintillometer saturation correction methods using field experimental data, *Boundary-Layer Meteorology*, DOI 10.1007/s10546-010-9540-x, 2010
23. E.G. Patton, T.W. Horst, P.P. Sullivan, D.H. Lenschow, S.P. Oncley, W.O.J. Brown, S.P. Burns, A.B. Guenther, A. Held, T. Karl, S.D. Mayor, L.V. Rizzo, S.M. Spuler, J. Sun, A.A. Turnipseed, E.J. Allwine, S.L. Edburg, B.K. Lamb, R. Avissar, R.J. Calhoun, **J. Kleissl**, The Canopy Horizontal Array Turbulence Study (CHATS), *Bulletin of the American Meteorological Society*, 593-611, May 2011
24. Dominguez A., **Kleissl J**, Luvall JC, Rickman DL, Development of a High-resolution Urban Thermal Sharpener (HUTS), *Remote Sensing of Environment*, 115(7):1772-1780, 2011
25. Nikolopoulou M, **Kleissl J**, Linden PF, Pedestrians' perception of environmental stimuli through field surveys: focus on particulate pollution, *Science of the Total Environment*, 409(13), 2493-2502, 2011
26. A. Nottrott, S. Onomura, M. Kanda, A. Inagaki and **J. Kleissl**, Convective heat transfer regime on leeward building walls in an urban environment, *International Journal of Heat and Mass Transfer*, 54(15):3128-3138, 2011
27. Mathiesen P, **Kleissl J**, Evaluation of numerical weather prediction for intra-day hourly solar irradiance forecasting in the CONUS, *Solar Energy*, 85(5): 967-977, 2011
28. Dominguez A, **Kleissl J**, Luvall JC, Effects of Solar Photovoltaic Panels on Roof Heat Transfer, *Solar Energy*, doi:10.1016/j.solener.2011.06.010, 85(9): 2244-2255, 2011
29. Lave, M., **J. Kleissl**, Arias-Castro, E., High-frequency fluctuations in clear-sky index, *Solar Energy*, doi:10.1016/j.solener.2011.06.031, 2011
30. Garai, A, **Kleissl J**, Air and surface temperature coupling in the convective atmospheric boundary layer, *J. Atmospheric Sciences*, doi: 10.1175/JAS-D-11-057.
31. Luoma, J, J Kleissl, K Murray, Optimum inverter sizing considering cloud enhancement, Solar Energy, 86(1):421-429.
32. Chow CW, Urquhart B, **Kleissl J**, Lave M, Dominguez A, Shields J, Washom B, Intra-hour forecasting with a total sky imager at the UC San Diego solar energy testbed, *Solar Energy*, doi:10.1016/j.solener.2011.08.025, *85*(11), 2881-2893, 2011.
33. Sun, L., Nottrott, A., **J Kleissl**, Effect of hilly urban morphology on dispersion characteristics in the urban boundary layer, *Buildings and Environment*, 48:195-205, 2012.
34. Yaghoobian, N., **J Kleissl**, An Indoor-Outdoor Building Energy Simulator to Study Urban Modification effects on Building Energy Use – Model Description and Validation, Energy and Buildings, 54: 407-417, 2012, http://dx.doi.org/10.1016/j.enbuild.2012.07.019
35. Yaghoobian, N., **J Kleissl**, Effect of Reflective Pavements on Building Energy Use, J. Urban Climate, http://dx.doi.org/10.1016/j.uclim.2012.09.002
36. Lave M, **J Kleissl**, J Stein, A Wavelet-based Variability Model (WVM) for Solar PV Powerplants, IEEE Transactions on Sustainable Energy, 10.1109/TSTE.2012.2205716, *4*(2), 501-509, 2012.
37. M Jamaly, JL Bosch, **J Kleissl**, Aggregate Ramp Rates of Distributed Photovoltaic Systems in San Diego County, IEEE Transactions on Sustainable Energy, 99, 2012, 10.1109/TSTE.2012.2201966
38. Mathiesen, P, J Brown, **J Kleissl**, Regime-Based California NWP Probabilistic Irradiance Forecasts, IEEE Transactions on Sustainable Energy, 99, 2012 10.1109/TSTE.2012.2200704.
39. Ru, Y, **J Kleissl**, S Martinez, Storage Size Determination for Grid-Connected Photovoltaic Systems, IEEE Transactions on Sustainable Energy, 99, 2012 10.1109/TSTE.2012.2199339
40. Hoff, T. E., Perez, R., Kleissl, J., Renne, D. and Stein, J. (2012), Reporting of irradiance modeling relative prediction errors. Prog. Photovolt: Res. Appl.. doi: 10.1002/pip.2225
41. Ghonima, M, **J Kleissl**, A Method for Cloud Classification Based on Ground Based Sky Imagery, Atmospheric Measurement Technology, 5, 2881-2892, 2012.
42. Luoma, J, P.Mathiesen, **J Kleissl**, Determination of forecast value considering energy pricing in California, Applied Energy, 125: 230-237, 2014.
43. Nottrott, A, **J Kleissl**, Energy dispatch schedule optimization and cost benefit analysis for grid-connected, photovoltaic-battery storage systems, Renewable Energy, 55:230-240, 2013.
44. Bosch JL, Y Zheng, **J Kleissl**, Deriving cloud velocity from an array of solar radiation measurements, *Solar Energy*, 87: 196-203, 2013, 10.1016/j.solener.2012.10.020.
45. Carrasco-Benavides M, S. Ortega-Farías, LO Lagos, **J Kleiss**l, L Morales, C Poblete-Echeverría, RG Allen, Crop coefficients and actual evapotranspiration for a drip-irrigated Merlot vineyard using multispectral satellite images, Irrigation Science, DOI: 10.1007/s00271-012-0379-4, 2012

46. Garai A, **J Kleissl**, Surface temperature and surface layer turbulence in a convective boundary layer, Boundary-Layer Meteorology, http://dx.doi.org/10.1007/s10546-013-9803-4, 148(1): 51-72, 2013.
47. Mathiesen, P, C Collier, J **Kleissl**, A high-resolution, cloud-assimilating numerical weather prediction model for solar irradiance forecasting, Solar Energy, 92:47-61, 10.1016/j.solener.2013.02.018., 2013.
48. Lave, M, J **Kleissl**, Cloud Speed Impact on Solar Variability Scaling - Application to the Wavelet Variability Model, Solar Energy, 91:11-21, 10.1016/j.solener.2013.01.023., 2013.
49. Bosch JL, **Kleissl** J, Cloud motion vectors from a network of ground sensors in a solar power plant, Solar Energy, 95:13-20, 10.1016/j.solener.2013.05.027, 2013.
50. Mejia F, J **Kleissl**, Soiling Losses for Solar Photovoltaic Systems in California, Solar Energy, 95:357-363, 2013.
51. Garai A, J Kleissl, Interaction between coherent structures and surface temperature and its effect on ground heat flux in an unstably stratified boundary layer, J. Turbulence, 14(8):1-23, 2013.
52. Fung, V., JL Bosch, S Roberts, J **Kleissl**, Cloud Shadow Speed Sensor, Atmospheric Measurement Techniques Discussions 6(5), 2013.
53. Ery Arias Castro, J **Kleissl**, M Lave, Jason Schweinsberg, Ruth Williams, A Poisson model for anisotropic solar ramp rate correlations, Solar Energy, 101:192-202, 2014, http://dx.doi.org/10.1016/j.solener.2013.12.028.
54. Nottrott A, J **Kleissl**, R Keeling, Modeling passive scalar dispersion in the atmospheric boundary layer with WRF large eddy simulation, Atmospheric Environment, 82:172-182, 2014.
55. Yang, H, B Kurtz, A Nguyen, B Urquhart, CW Chow, M Ghonima, J **Kleissl**, Solar irradiance forecasting using a ground-based sky imager developed at UC San Diego, Solar Energy, 103: 502-524, 2014.
56. Hanna, R., **Kleissl, J.**, Nottrott, A., & Ferry, M. (2014). Energy dispatch schedule optimization for demand charge reduction using a photovoltaic-battery storage system with solar forecasting. Solar Energy, 103, 269-287.
57. Dung (Andu) Nguyen, **J Kleissl**, Stereographic methods for cloud base height determination using two sky imagers, Solar Energy, 2014, 107:495-509, http://dx.doi.org/10.1016/j.solener.2014.05.005
58. Urquhart, B., Kurtz, B., Dahlin, E., Ghonima, M., Shields, J. E., and **J Kleissl.**: Development of a sky imaging system for short-term solar power forecasting, Atmos. Meas. Tech. Discuss., 7, 4859-4907, doi:10.5194/amtd-7-4859-2014, 2014.
59. Lipperheide, M., JL Bosch, **J Kleissl**, Embedded nowcasting method using cloud speed persistence for a photovoltaic power plant, doi:10.1016/j.solener.2014.11.013, 112: 232–238, 2015.
60. Yaghoobian, N., **J Kleissl**, An improved three-dimensional simulation of the diurnally-varying street canyon flow, *Boundary-Layer Meteorology* 153.2 (2014): 251-276.
61. Garai, A., S Sarkar and **J Kleissl**, Flow and heat transfer in a convectively unstable turbulent channel flow with solid-wall heat conduction, *Journal of Fluid Mechanics* 757 (2014): 57-81.
62. Ru, Y., **Kleissl, J.**, & Martinez, S. (2014). Exact sizing of battery capacity for photovoltaic systems. *European Journal of Control*, *20*(1), 24-37.
63. Hong, S. H., Hendrickx, J. M. H., **Kleissl, J.**, Allen, R. G., Bastiaanssen, W. G. M., Scott, R. L., & Steinwand, A. L. (2014). Evaluation of an extreme-condition-inverse calibration remote sensing model for mapping energy balance fluxes in arid riparian areas. *Hydrology and Earth System Sciences Discussions*, *11*(12), 13479-13539.
64. Chow, CW, S. Belongie, **J Kleissl**, Cloud Motion and Stability Estimation for Intra-hour Solar Forecasting, *Solar Energy* 115 (2015): 645-655.
65. Zhong, X., & **Kleissl, J.** (2015). Clear sky irradiances using REST2 and MODIS. *Solar Energy*, *116*, 144-164.
66. Carrasco-Benavides, M., Ortega-Farías, S., Lagos, L. O., **Kleissl, J.**, Morales-Salinas, L., & Kilic, A. (2014). Parameterization of the Satellite-Based Model (METRIC) for the Estimation of Instantaneous Surface Energy Balance Components over a Drip-Irrigated Vineyard. *Remote Sensing*, *6*(11), 11342-11371.
67. Ghonima, M. S., Norris, J. R., Heus, T., & **Kleissl, J.** (2015). Reconciling and Validating the Cloud Thickness and Liquid Water Path Tendencies Proposed by R. Wood and JJ van der Dussen et al. *Journal of the Atmospheric Sciences*,*72*(5), 2033-2040.
68. Chu, Y., Urquhart, B., Gohari, S. M., Pedro, H. T., **Kleissl, J.**, & Coimbra, C. F. (2015). Short-term reforecasting of power output from a 48 MWe solar PV plant.*Solar Energy*, *112*, 68-77.
69. Nazarian, N., & **Kleissl, J.** (2015). CFD simulation of an idealized urban environment: Thermal effects of geometrical characteristics and surface materials. *Urban Climate*, *12*, 141-159.

70. Nazarian, N., and **J. Kleissl**. "Realistic solar heating in urban areas: Air exchange and street-canyon ventilation." *Building and Environment* 95 (2016): 75-93.
71. Nguyen, A., Velay, M., Schoene, J., Zheglov, V., Kurtz, B., Murray, K., Torre, B. and **Kleissl, J.**, 2016. High PV penetration impacts on five local distribution networks using high resolution solar resource assessment with sky imager and quasi-steady state distribution system simulations. Solar Energy, 132, 221-235.
72. Urquhart, B., Kurtz, B., and **J Kleissl**: Sky camera geometric calibration using solar observations, Atmospheric Measurement Techniques, 9(9) 4279-4294.
73. Felipe A Mejia, Ben Kurtz, Keenan Murray, Laura Hinkelman, Manajit Sengupta, Yu Xie, **J Kleissl**, 'Coupling sky images with three-dimensional radiative transfer models: a new method to estimate cloud optical depth', Atmospheric Measurement Techniques Discussions 8, 11285-11321, doi:10.5194/amtd-8-11285-2015, 2015.
74. Ghonima, M.S., T. Heus, J.R. Norris, and **J. Kleissl**, Factors controlling Stratocumulus cloud lifetime over the coast, J. Atmospheric Sciences, 73(8), 2961-2983, 2016.
75. Perez, R, M. David, T. Hoff, P. Lauret, S. Kivalov, **J. Kleissl**, P. Lauret, M. Perez, 2016, Spatial and temporal intermittency of solar energy, Foundation and Trends in Renewable Energy, 1 (1), 1-44.
76. Melville, W. K., Lenain, L., Cayan, D. R., Kahru, M., **Kleissl, J.**, Linden, P., & Statom, N. M. (2016). The Modular Aerial Sensing System. Journal of Atmospheric and Oceanic Technology, (2016).
77. Wang, Guang, B. Kurtz, and **J. Kleissl**. "Cloud base height from sky imager and cloud speed sensor." Solar Energy 131 (2016): 208-221.
78. Yang, Handa, and **J. Kleissl**. "Preprocessing WRF initial conditions for coastal stratocumulus forecasting." Solar Energy 133 (2016): 180-193.
79. Zhong, Xiaohui, José A. Ruiz-Arias, and **J. Kleissl**. "Dissecting surface clear sky irradiance bias in numerical weather prediction: Application and corrections to the New Goddard Shortwave Scheme." Solar Energy 132 (2016): 103-113.
80. Pecenak, Z, F Mejia, A Evan, J Kleissl, Simulating irradiance enhancement dependence on cloud optical depth and solar zenith angle, Solar Energy, 136, 675-681, 2016.
81. Kurtz, B, J Kleissl, Measuring diffuse, direct and global irradiance from a sky imager, Solar Energy, 141, 311-322, 2017.
82. Habib AH, VR Disfani, J Kleissl, RA de Callafon, Optimal switchable load sizing and scheduling for stand-alone renewable energy systems, Solar Energy 144, 707-720, 2017.
83. Nazarian N, J Fan, T Sin, L Norford, J Kleissl, Predicting outdoor thermal comfort in urban environments: A 3D numerical model for standard effective temperature, Urban Climate, 2017.
84. Hanna R, M Ghonima, J Kleissl, G Tynan, D Victor, Evaluating business models for microgrids: Interactions of technology and policy, Energy Policy, 103, 47-61, 2017.
85. Zhong, X, DK Sahu, J Kleissl, WRF inversion base height ensembles for simulating marine boundary layer stratocumulus, Solar Energy, 146, 50-64, 2017.
86. Babacan O, W Torre, J Kleissl, Siting and sizing of distributed energy storage to mitigate voltage impact by solar PV on distribution systems, Solar Energy, 146, 199-208.
87. Bright JM, O Babacan, J Kleissl, PG Taylor, R Crook, A synthetic, spatially decorrelating solar irradiance generator and application to a low-voltage grid with high PV penetration, Solar Energy, 147, 83-98.
88. BO Akyurek, J Kleissl, Closed-Form Analytic Solution of Cloud Dissipation for a Mixed Layer Model, Journal of the Atmospheric Sciences, in press
89. Kurtz, B, FA Mejia, J Kleissl, A Virtual Sky Imager Testbed for Solar Energy Forecasting, Solar Energy, December 2017, 158: 753-759, https://doi.org/10.1016/j.solener.2017.10.036.
90. Pecenak ZK, Disfani VR, Reno MJ, Kleissl J. Multiphase distribution feeder reduction. IEEE Transactions on Power Systems. 2017 Jul 12.
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117. D Cañadillas, H Valizadeh-Haghi, J Kleissl, B González-Díaz, R Guerrero-Lemus, EDA-based optimized global control for PV inverters in distribution grids, IET Renewable Power Generation, under review, 2020
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121. ZK Pecenak, M Stadler, P Mathiesen, K. Fahy, J Kleissl, Robust Design of Microgrids Using a Hybrid Minimum Investment Optimization, Applied Energy, under review, 2020
122. ZK Pecenak, C Li, H Valizadeh-Haghi, J Kleissl, Aggregation of Voltage-Controlled Devices During Distribution Network Reduction, IEEE Transactions on Smart Grid,
123. Michael Stadler, ZK Pecenak, P Mathiesen, Kelsey Fahy, J Kleissl, Performance Comparison between Peak Demand Preserving Day-type and Full Time Series Economic Optimization for 13 US Microgrids, submitted to Applied Energy

Book Chapters

124. Bryan Urquhart, Mohamed Ghonima, Dung Nguyen, Ben Kurtz, Chi Wai Chow and Jan Kleissl, Sky Imaging Systems for Short-term Forecasting, in: Solar Resource Assessment and Forecasting (Editor Jan Kleissl), Elsevier, 2013
125. Patrick Mathiesen, Craig Collier, and Jan Kleissl, Solar Forecasting Case Studies with the Weather and Research Forecasting Model at GL-Garrad Hassan, in: Solar Resource Assessment and Forecasting (Editor Jan Kleissl), Elsevier, 2013
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127. Lave M., J. Stein, J Kleissl, Quantifying and Simulating Solar Power Plant Variability using Irradiance Data, in: Solar Resource Assessment and Forecasting (Editor Jan Kleissl), Elsevier, 2013

Presentations in Conferences and Congresses

Too many to list

Teaching Experience

- **Instructor**:
    - Applied Boundary Layer Meteorology, S2005, Michigan Technol. Univ.
    - Environmental Physics for Evapotranspiration, S2006, New Mexico Tech

  - MAE125A Environmental Flows and Transport, F2007, F2008, F2009.
  - MAE126B Environmental Engineering Research, S2007, S2008, S2009, S2010, S2011, S2012, S2013, S2014, S2015, S2016, S2017
  - MAE199: independent research
  - MAE255: Boundary Layer and Renewable Energy Meteorology, S2009, S2012.
  - MAE110A: Thermodynamics, F2009, W2011, W2014.
  - MAE126A: Laboratory Experiments, W2011, W2012, W2013, W2014, W2015, W2016, W2017, W2018, W2019, W2020, W2021
  - MAE101C: Heat Transfer, F2014
  - MAE123 Ground Water Flow W2017, W2018, W2019
  - MAE125 Building Energy Efficiency: W2019, W2021
  - MAE119 Introduction to Solar and Wind Energy: W2020
- **Teaching Assistant**: Applied Mathematics for Engineering (graduate, F2002, F2001, S2001), Hydrology (graduate, F2000), JHU

Field Measurement Campaigns

- **Scintillometers:** New Mexico, 2005: Sensible heat flux measurements over dry and humid transects as ground-truth for satellite estimates using SEBAL
- **Mountain Meteorology:** Azores, Summer 2004: Wireless sensors, meteorological measurements, and MODIS satellite data are collected to study upslope and down-slope flow on the slope of a mountain in the North Atlantic.
- **Evapotranspiration over vineyards:** February 2003 & October 2005, Eddy correlation studies of evaporation over vineyards in collaboration with Universidad de Talca, Chile.
- **Biocomplexity in the Environment:** Instrumentation to measure the emission and transport of biological aerosols (pollen) in the atmosphere, July 2003, Hurlock, MD.
- **SGS2002** (SubGrid-Scale experiment), Salt Flats, UT, June 2002: Deployment of sixteen 3D-sonic anemometers to study subgrid-scale physics for large eddy simulation. Other collaborators examine turbulence at high Reynolds numbers.
- **Baltimore Supersite Study**, May 2001 – February 2003: Conducted lidar measurements to determine atmospheric boundary layer height, entrainment dynamics and plume characteristics. Meteorological measurements support source attribution of highly time and size resolved concentrations of PM2.5.
- **HATS** (Horizontal Array Turbulence Study), Kettlemen City, CA, September 2000, in collaboration with NCAR-ATD and MMM: Deployment of fourteen 3D-sonic anemometers in the central valley of CA to study subgrid-scale physics for large eddy simulation.

Professional Affiliations (current or past)

American Meteorological Society, American Physical Society Division of Fluid Dynamics, American Solar Energy Society (Chair, Resource Applications Division), Institute of Electrical and Electronics Engineers (IEEE)

Special Skills

- **Private Pilot Certificate**
- **Languages**: Fluent in German, English, Spanish, French.