



CBE Publications & Report List December 2021

Papers that summarize research by CBE and affiliated institutions have appeared in the following journals, trade magazines, and conference proceedings. Many of these publications are also available from the eScholarship Repository, on-line at http://escholarship.org/uc/cedr_cbe.

2021

Parkinson, T., S. Schiavon, R. de Dear, and G. Brager. 2021. Overcooling of offices reveals gender inequity in thermal comfort. *Nature Scientific Reports*, Volume 11, Issue 1. December. <https://doi.org/10.1038/s41598-021-03121-1> <https://escholarship.org/uc/item/5rk4b607> **NEW**

Kent, M., T. Parkinson, J. Kim, and S. Schiavon. 2021. A data-driven analysis of occupant workspace dissatisfaction. *Building and Environment*, Volume 205. November. <https://doi.org/10.1016/j.buildenv.2021.108270> <https://escholarship.org/uc/item/9r901701> **NEW**

He, Y., Y. Zhou, J. Yuan, Z. Liu, Z. Wang, and G. Zhang. 2021. Transformation towards a carbon-neutral residential community with hydrogen economy and advanced energy management strategies. *Energy Conversion and Management*, Volume 249. October. <https://doi.org/10.1016/j.enconman.2021.114834> <https://escholarship.org/uc/item/61g3g267> **NEW**

Dawe, M., C. Karmann, S. Schiavon, and F. Bauman. 2021. Field evaluation of thermal and acoustical comfort in eight North-American buildings using embedded radiant systems. *PLOS ONE*, Volume 16, Issue 10. October. <https://doi.org/10.1371/journal.pone.0258888> <https://escholarship.org/uc/item/24k6q5zg> **NEW**

Tartarini, F., S. Schiavon, O. Jay, E. Arens, and C. Huizenga. 2021. Application of gagge's energy balance model to determine humidity-dependent temperature thresholds for healthy adults using electric fans during heatwaves. *Building and Environment*. October. <https://doi.org/10.1016/j.buildenv.2021.108437> <https://escholarship.org/uc/item/5th5s8qb> **NEW**

Xiong, J., S. Carter, O. Jay, E. Arens, H. Zhang, M. Deuble, and R. de Dear. 2021. A sex/age anomaly in thermal comfort observed in an office worker field study: A menopausal effect? *Indoor Air*. August. <https://doi.org/10.1111/ina.12926> <https://escholarship.org/uc/item/1dk4z7th> **NEW**

He, Y., Y. Zhou, Z. Wang, J. Liu, Z. Liu, and G. Zhang. 2021. Quantification on fuel cell degradation and techno-economic analysis of a hydrogen-based grid-interactive residential energy sharing network with fuel-cell-powered vehicles. *Applied Energy*, Volume 303. August. <https://doi.org/10.1016/j.apenergy.2021.117444> <https://escholarship.org/uc/item/8ms2x24r> **NEW**

Miller, D., P. Raftery, M. Nakajima, S. Salo, L. Graham, T. Peffer, M. Delgado, H. Zhang, G. Brager, D. Douglass-Jaimes, G. Paliaga, S. Cohn, M. Greene, and A. Brooks. 2021. Cooling energy savings and occupant feedback in a two year retrofit evaluation of 99 automated ceiling fans staged with air conditioning. *Energy and Buildings*, Volume 251. August. <https://doi.org/10.1016/j.enbuild.2021.111319> <https://escholarship.org/uc/item/7752j100> **NEW**

Porras-Salazar, JA., S. Schiavon, P. Wargocki, T. Cheung, and KW. Tham. 2021. Meta-analysis of 35 studies examining the effect of indoor temperature on office work performance. *Building and Environment*, Volume 203. June. Open Access. <https://doi.org/10.1016/j.buildenv.2021.108037> **NEW**

Tran, P., M. Adam, KW. Tham, S. Schiavon, J. Pantelic, P. Linden, E. Sofianopoulou, C. Sekhar, D. Cheong, and R. Balasubramanian. 2021. Assessment and mitigation of personal exposure to particulate air pollution in cities: An exploratory study. *Sustainable Cities and Society*, Volume 72. May. <https://doi.org/10.1016/j.scs.2021.103052> <https://escholarship.org/uc/item/3tm9n180> **NEW**

Mishra, A.K., S. Schiavon, P. Wargocki, and K. Wai Tham. 2021. Respiratory performance of humans exposed to moderate levels of carbon dioxide. *Indoor Air*. May. <https://doi.org/10.1111/ina.12823> <https://escholarship.org/uc/item/8qj5v8d1> **NEW**

Luo, M., H. Zhang, P. Raftery, L. Zhou, T. Parkinson, E. Arens, Y. He, and E. Present. 2021. Detailed measured air speed distribution in four commercial buildings with ceiling fans. *Building and Environment*, Volume 200, ISSN 0360-1323. May. <https://doi.org/10.1016/j.buildenv.2021.107979> <https://escholarship.org/uc/item/3ts5528s> **NEW**

Parkinson, T., H. Zhang, E. Arens, Y. He, R. de Dear, J. Elson, A. Parkinson, C. Maranville, and A. Wang. 2021. Predicting thermal pleasure experienced in dynamic environments from simulated cutaneous thermoreceptor activity. *Indoor Air*. May. <https://doi.org/10.1111/ina.12859> <https://escholarship.org/uc/item/1xd8n2t0> **NEW**

Xu, Y., P. Raftery, and S. Schiavon. 2021. Capturing energy savings from correcting VAV box minimums on campus. Masters of Science Thesis. Department of Architecture, University of California, Berkeley. May. <https://escholarship.org/uc/item/6zt4k0hd> **NEW**

Liang, R., M. Kent, R. Wilson, and Y. Wu. 2021. The effect of thermochromic windows on visual performance and sustained attention. *Energy and Buildings*, Volume 236. April. <https://doi.org/10.1016/j.enbuild.2021.110778> <https://escholarship.org/uc/item/9kt889fn> **NEW**

Graham, L., T. Parkinson, and S. Schiavon. 2021. Lessons learned from 20 years of CBE's occupant surveys. *Building and Cities*, Volume 2, Issue 1, pages 166-184. February. <https://doi.org/10.5334/bc.76>

2020

Tartarini, F., S. Schiavon, T. Cheung, and T. Hoyt. 2020. CBE thermal comfort tool: Online tool for thermal comfort calculations and visualizations. *SoftwareX*, 12:100563. <https://doi.org/10.1016/j.softx.2020.100563>

Tartarini, F. and S. Schiavon. 2020. Pythermalcomfort: A python package for thermal comfort research. *SoftwareX*, 12:100578. <https://doi.org/10.1016/j.softx.2020.100578>

Gall, E., A. Mishra, J. Li, S. Schiavon, and A. Lauguerre. 2020. Impact of cognitive tasks on co2 and isoprene emissions from humans. *Environmental Science & Technology*, Volume 55, Pages 139-148. December. <https://doi.org/10.1021/acs.est.0c03850>
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Lassen, N., F. Goia, S. Schiavon, and J. Pantelic. 2020. Field investigations of a smiley-face polling station for recording occupant satisfaction with indoor climate. *Building and Environment*. Volume 185. November. <https://doi.org/10.1016/j.buildenv.2020.107266>

He, Y., E. Arens, N. Li, Z. Wang, H. Zhang, Y. A, and C. Yuan. 2020. Modeling solar radiation on a human body indoors by a novel mathematical model. *Building and Environment*, Volume 187. November. <https://doi.org/10.1016/j.buildenv.2020.107421>
<https://escholarship.org/uc/item/78f0b543>

Tartarini, F. and S. Schiavon. 2020. Skin temperature sampling period for longitudinal thermal comfort studies. *Proceedings of the Indoor Air 2020*. November. <https://escholarship.org/uc/item/9jn57924>

Cheung, T., S. Schiavon, L. Graham, and K. Tham. 2020. Occupant satisfaction with the indoor environment in seven commercial buildings in Singapore. *Building and Environment*. November. <https://doi.org/10.1016/j.buildenv.2020.107443> <https://escholarship.org/uc/item/43k2z2zx>

Ko, W., M. Kent, S. Schiavon, B. Levitt, and G. Betti. 2020. A window view quality assessment framework. *CBE Report*. October. <https://escholarship.org/uc/item/5ft4f88r> **NEW**

Duarte Roa, C., S. Schiavon, and T. Parkinson. 2020. Targeted occupant surveys: A novel method to effectively relate occupant feedback with environmental conditions. *Building and Environment*, Volume 184. October. <https://doi.org/10.1016/j.buildenv.2020.107129>
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He, Y., N. Li, H. Zhang, Y. Han, J. Lu, and L. Zhou. 2020. Air-conditioning use behaviors when elevated air movement is available. *Energy and Buildings*, Volume 225. October. <https://doi.org/10.1016/j.enbuild.2020.110370> <http://escholarship.org/uc/item/9np5x6cv>

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- Kent, M. and S. Schiavon. 2020. Evaluation of the effect of landscape distance seen in window views on visual satisfaction. *Building and Environment*. August.
<https://doi.org/10.1016/j.buildenv.2020.107160> <https://escholarship.org/uc/item/6gd9t8pj>
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<https://doi.org/10.1016/j.enbuild.2020.110085> <https://escholarship.org/uc/item/0s76t57k>
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- Rafsanjani, H., and A. Ghahramani. 2020. Towards utilizing internet of things (IoT) devices for understanding individual occupants' energy usage of personal and shared appliances in office buildings. *Journal of Building Engineering*, Vol. 27. January.
<https://doi.org/10.1016/j.jobe.2019.100948> <https://escholarship.org/uc/item/07v2s2xm>
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- Luo, M., Z. Wang, H. Zhang, E. Arens, D. Filingeri, L. Jin, A. Ghahramani, W. Chen, Y. He, and B. Si. 2020. High-density thermal sensitivity maps of the human body. *Building and Environment*, Vol 167. January. <https://doi.org/10.1016/j.buildenv.2019.106435>
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- Aijazi, A., R. Best, and S. Schiavon. 2019. Optimizing energy conservation measures in a grocery store using present and future weather files. *Proceedings of the International Building Performance Simulation Association*, Volume 16. September. <https://escholarship.org/uc/item/2j83q6pb>
- Pantelic, J., S. Liu, L. Pistore, D. Licina, M. Vannucci, S. Sadrizadeh, A. Ghahramani, B. Gilligan, E. Sternberg, K. Kampschroer, and S. Schiavon. 2019. Personal CO₂ cloud: Laboratory measurements of metabolic CO₂ inhalation zone concentration and dispersion in a typical office desk setting. *Journal of Exposure Science & Environmental Epidemiology*, 1–10. August. <https://doi.org/10.1038/s41370-019-0179-5>
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Dawe, M. 2019. Field evaluation of occupant satisfaction and energy performance in eight LEED-certified buildings using radiant systems. Master of Science Thesis. Dept. of Architecture, University of California, Berkeley. June. <https://escholarship.org/uc/item/6d95z6sw>

Dawe, M., P. Raftery, J. Woolley, S. Schiavon, and F. Bauman. 2019. Comparison of mean radiant and air temperatures in mechanically-conditioned commercial buildings from over 200,000 field and laboratory measurements. Submitted to *Energy and Buildings*. June. <https://doi.org/10.1016/j.enbuild.2019.109582> <https://escholarship.org/uc/item/2sn4v9xr>

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