

Zhu Deng (鄧鑄), Dr.

Research interests: *Climate Change; Greenhouse Gas Budget; AI and Spatial Big Data*

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WORKING EXPERIENCE

Post-doctoral Research Fellow, 2024-present
Department of Geography, The University of Hong Kong, Hong Kong SAR, China
Supervised by Prof. Peng Gong

Research Assistant / Senior Algorithm Engineer, 2022-2024
Alibaba Innovative Research, Alibaba Cloud & Tsinghua University, Hangzhou, China

EDUCATIONS

Ph.D., Ecology, 2016-2022
Department of Earth System Science, Tsinghua University, Beijing, China
Dissertation: Research on Near-real-time Accounting for Anthropogenic CO₂ Emissions
Supervised by Prof. Zhu Liu & Prof. Philippe Ciais

B.S., Geographic Information System & Remote Sensing, 2012-2016
School of Geography and Planning, Sun Yat-sen University, Guangzhou, China

SELECTED PUBLICATIONS

Legend: 🔥 ESI Hot Paper 🏆 ESI Highly Cited Paper † Co-First Author

- Z Deng**[†], P Ciais[†], ZA Tzompa-Sosa, M Saunois, C Qiu, C Tan, T Sun, P Ke, Y Cui, K Tanaka, X Lin, RL Thompson, H Tian, Y Yao, Y Huang, R Lauerwald, AK Jain, X Xu, A Bastos, S Sitch, PI Palmer, T Lauvaux, A d'Aspremont, C Giron, A Benoit, B Poulter, J Chang, R Petrescu, SJ Davis, Z Liu, G Grassi, C Albergel, and F Chevallier. Comparing national greenhouse gas budgets reported in UNFCCC inventories against atmospheric inversions. *Earth System Science Data*. 2022. 🏆 [Citations: 110]
- Z Liu[†], **Z Deng**[†] (Co-first author, advisor listed as first), P Ciais, J Tan, B Zhu, SJ Davis, RM Andrew, O Boucher, SB Arou, JG Canadell, X Dou, P Friedlingstein, R Guo, C Hong, RBJackson, D Kammen, P Ke, C Le Quéré, C Monica, G Janssens-Maenhout, GP Peters, K Tanaka, Y Wang, B Zheng, H Zhong, T Sun, H Schellnhuber, P Gentine. Global patterns of daily CO₂ emissions reductions in the first year of COVID-19. *Nature Geoscience*. 2022. [Citations: 77]
- Z Liu[†], P Ciais[†], **Z Deng**[†] (Co-first author, advisor listed as first), R Lei, SJ Davis, S Feng, B Zheng, D Cui, X Dou, P He, B Zhu, C Lu, P Ke, T Sun, Y Wang, X Yue, Y Wang, Y Lei, H Zhou, Z Cai, Y Wu, R Guo, T Han, J Xue, O Boucher, F Chevallier, E Boucher, Y Wei, Q Zhang, D Guan, P Gong, DM Kammen, K He, and HJ Schellnhuber. Near-real-time

monitoring of global CO₂ emissions reveals the effects of the COVID-19 pandemic. **Nature Communications**. 2020. 🔥🏆 [Citations: 1059]

4. Z Liu, **Z Deng**, G He, H Wang, X Zhang, J Lin, Y Qi, X Liang. Challenges and opportunities for carbon neutrality in China. **Nature Reviews Earth & Environment**. 2022. 🔥🏆 [Citations: 971]
5. B Zhu[†], **Z Deng**[†], X Song[†], W Zhao, D Huo, T Sun, P Ke, D Cui, C Lu, H Zhong, C Hong, J Qiu, SJ Davis, P Gentine, P Ciais, Z Liu. CarbonMonitor-Power near-real-time monitoring of global power generation on hourly to daily scales. **Scientific Data**. 2023. [Citations: 4]
6. Z Liu[†], P Ciais[†], **Z Deng**[†] (Co-first author, advisor listed as first), SJ Davis, B Zheng, Y Wang, Y Lei, D Cui, B Zhu, X Dou, P Ke, T Sun, R Guo, C Lu, R Guo, O Boucher, F-M Bréon, E Boucher, and F Chevallier. Carbon Monitor: a near-real-time daily dataset of global CO₂ emission from fossil fuel and cement production. **Scientific Data**. 2020. 🏆 [Citations: 195]

PROFESSIONAL ACTIVITIES

IPCC Expert Meeting on Reconciling Land Use Change Emissions	<i>Ispra, Italy, 2024</i>
Global Youth Summit on Net-Zero Future	<i>Beijing, China, 2021</i>
2021 Sino-American Youth Dialogue	<i>Beijing, China, 2021</i>
ESA-CCI RECCAP2 progress meeting	<i>Virtual meeting, 2021</i>

SELECTED HONORS & AWARDS

The RGC Postdoctoral Fellowship Scheme (PDFS), University Grants Committee	2024
Jiang Nanxiang (Presidential) Scholarship, Tsinghua University	2021