

EGU24-11412, updated on 20 May 2024

<https://doi.org/10.5194/egusphere-egu24-11412>

EGU General Assembly 2024

© Author(s) 2024. This work is distributed under the Creative Commons Attribution 4.0 License.



## Indirect impacts of region-specific heat extremes along the global supply network

**Xudong Wu**<sup>1,2</sup>, Lennart Quante<sup>1</sup>, and Anders Levermann<sup>1</sup>

<sup>1</sup>Potsdam Institute for Climate Impact Research, Potsdam, 14473, Germany (wuxudong@bjfu.edu.cn)

<sup>2</sup>School of Soil and Water Conservation, Beijing Forestry University, Beijing, 100083, China

The last decade has witnessed a surging occurrence of extreme heat worldwide. This can directly dampen local production capacity and also induce indirect repercussions through the global supply network. Yet, the cascading effect of region-specific extreme heat may differ greatly, which is by far poorly understood. By combining temperature observations with Acclimate—a dynamic agent-based model, we identify the region-specific temperature threshold for dampening local production and investigate the response of the global supply network to extreme heat in a region-by-region manner. Economic agents with significant repercussions on the globe are identified and indirect benefits along the global supply network from local heat adaptation are revealed. The outcome of this study supports common but differentiated adaptation strategies towards extreme heat.