

## **ABSTRACT**

The increasing frequency and severity of extreme weather events due to climate change pose significant risks to the global economy. The resulting losses are transmitted and amplified through supply chains. While existing research primarily examines how climate shocks propagate over a fixed economic structure, this study explores how such shocks influence the evolution of production networks. We construct global synthetic firm-level production networks by following Bhattathiripad and Veetil (forthcoming) and simulate extreme weather events at a plant-level resolution, allowing the network to adapt dynamically to such disruptions. Preliminary findings reveal that output continues to decline even after direct losses stabilize, highlighting the role of propagation dynamics and feedback loops. Moreover, risk assessments based on average losses underestimate extreme scenarios. This study contributes to the understanding of supply chain adaptation to climate shocks and proposes a bottom-up metric for evaluating the global economic impact of extreme weather disruptions.