POLITECNICO MILANO 1863

STEP-CHANGE Seminar Series

GLOBAL SPILLOVER RISKS FROM HUMID-HEAT-INDUCED PRODUCTION DISRUPTIONS

Dr Xudong Wu

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Humid heat can reduce local labour productivity and dampen production in most economic sectors. These regional production disruptions may propagate through global supply chains, resulting in spillover effects and macroeconomic losses. In a warming climate, understanding these spillover risks to global producers and consumers becomes increasingly important.

By integrating a recently developed wet-bulb globe temperature dataset into the well-established agent-based economic loss-propagation model Acclimate, we investigate direct regional production losses and the spread of these disruptions across global supply chains over the historical period and under future warming scenarios.

This talk will further examine the uneven distribution of spillover risks across regions and income groups, and discuss the implications for region-specific climate adaptation and risk management.

Dr Xudong Wu is a Marie Curie Fellow at the Environmental Change Institute, University of Oxford. He is associated with the Oxford Programme for Sustainable Infrastructure Systems (OPSIS), working on the resilience of macroeconomic networks to climate hazards. He is also interested in modeling high-resolution global land-use and land-cover change and integrating these datasets with large-scale agricultural models such as Lund-Potsdam-Jena managed Land (LPJmL). Before joining the Environmental Change Institute, Xudong worked as a Humboldt Fellow at the Potsdam Institute for Climate Impact Research (PIK), where he used complexity modelling tools to investigate the propagation of disaster-induced losses across global supply chains, and as a senior scientist at Beijing Forestry University, where he led a group to develop fine-scale global land-use datasets and to assess the spatially explicit environmental footprint of shifting consumption patterns. Xudong holds a PhD in Fluid Mechanics from Peking University, and a Bachelor's degree in Energy Engineering with a minor in Literature from Huazhong University of Science and Technology.

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