EGU22-13553
https://doi.org/10.5194/egusphere-egu22-13553
EGU General Assembly 2022

Economic costs of climate extremes

Leonie Wenz
PIK Potsdam

Climate extremes have been shown to have adverse effects on various productive elements of the economy such as labour productivity or agricultural yields, measurable at the macro-level as changes
in Gross Domestic Product (GDP). Estimates of these macroeconomic costs of climate change play an
important role in climate policy debates and decisions. However, current estimates differ vastly – partly because it is unclear how resilient affected regions, sectors and communities are and how persistently climate extremes can hence affect them. In this talk, I will give an overview of recent findings in this research area. Specifically, I will present insights gained from a novel data set comprising subnational GDP data from the past 40 years and more than 1500 regions worldwide. Based on these granular data, we have empirically estimated historic temperature and precipitation
impacts at different time scales, from daily fluctuations and extremes to changes in the long-term mean. In total, we have identified five separate impact channels – most of them have been unaccounted for in previous assessments. Our findings show that economic output is strongly affected
by rainfall and temperature changes but that these effects display large spatial heterogeneity . Whereas low-income, low-latitude regions are most vulner able to rising and erratic temperatures, increases in the number of rainy days and extreme rainfall events are most harmful in wealth y, industrialized countries. I will conclude by discussing implications for assessments of the costs of climate change.