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Cascading climate change impact and rapid low-carbon transition pathways

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Climate change impacts and maladaptive responses to them have potential to disrupt societies at multiple scales via networks of trade, finance, mobility and communication, and to impact vulnerable groups most heavily. Such disruptions that may cascade across geographical and political boundaries need risk management strategies that treat the world as a complex adaptive system. Understanding where and how to intervene in the system to best reduce potentially cascading impacts is becoming an essential part of resilience planning. The presentation will also explore how the knowledge on complex systems and non-linear dynamics can be used in climate mitigation. Profound and exponential changes in human lifestyles, social institutions, governance, infrastructure, and technology are needed. The key interventions that have can activate rapid system wide tipping to reduce the greenhouse gas emissions in this decade include removing fossil-fuel subsidies and incentivizing decentralized energy generation, building carbon-neutral cities, divesting from assets linked to fossil fuels, revealing the moral implications of fossil fuels, strengthening climate education and engagement, and disclosing greenhouse gas emissions information. They operate at different time scales and different social structure layers.