

Physics Colloquium Mainz

May 14, 2024 at 16 c.t.

Lecture room KPH,
Johann-Joachim-Becher-Weg 45, JGU

I will first illustrate two key conclusions from the latest report of the Intergovernmental Panel on Climate Change, IPCC, from 2021. The first states that “it is unequivocal that human influence has warmed the atmosphere, ocean and land”. The second states that “global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO₂ and other greenhouse gas emissions occur in the coming decades.” I will then explain how these results built on the work of Klaus Hasselmann and Syukuro Manabe, respectively, who shared the Nobel Prize in physics in 2021. The second of the statements was made possible through remarkable research progress during the past decade, and I will demonstrate how the scientific process within the IPCC turned a seeming scientific crisis into substantial progress. Finally, I will look at the still unsolved problem of understanding the future of the Atlantic Ocean circulation and how we tackle this problem in current research.

Origin and Future of Climate Change
Prof. Dr. Jochem Marotzke
Max-Planck-Institute for Meteorology,
Hamburg

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