

Uneven distributions of four hazard indicators of climate change with the Paris Agreement's goals

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Clarifying characteristics of hazards and risks of climate change at 2°C and 1.5°C global warming is important for understanding the implications of the Paris Agreement. We perform and analyse large ensembles of 2°C and 1.5°C warming simulations. In the 2°C runs, we find substantial increases in extreme hot days, heavy rainfalls, high streamflow and labor capacity reduction related to heat stress. For example, about half of the world's population will experience a present day 1-in-10 year hot day event every other year at 2°C warming. The regions with largely increases of these four hazard indicators coincide with countries characterized by small CO₂ emissions, low-income and high vulnerability. Limiting global warming to 1.5°C, compared to 2°C, will lower increases in the four hazard indicators especially in those regions.

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