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Retooling climate science for risk assessment

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Over recent years, climate change has become a global issue, leading political agendas and projecting onto almost every economic and development decision made today. However, the way that we conduct climate science has remained broadly unchanged since the publication of the first IPCC report in 1990 - still relying on an ensemble of opportunity of climate models which doesn't allow for an estimation of high-impact tail risks and a highly idealized scenario framework which fails to test the fundamental technological assumptions which underpin our remaining pathways for achieving the Paris Agreement. Here, we discuss how our strategy within the Make Our Planet Great Again "RISCCI" project is attempting to reframe the simulation of climate projections such as to provide better guidance for robust decision-making by categorizing the deep uncertainties of climate projections and mitigation pathways. We present the initial results from an CNRM ensemble project which seeks to explore tail behaviour in climate feedbacks and impacts, and outline in a wider sense how future work and climate assessment needs to respond to the growing and evolving needs of a society as it works to minimise, and adapt to, climate change.