

A new dawn for climate prediction

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Scientists must develop new, more adaptive approaches to predicting and monitoring climate, say climate modellers from the University of Exeter. In a 'perspectives' article published in leading journal *Science*, Professor Peter Cox and Professor David Stephenson argue that new prediction tools are required to help us to limit and adapt to climate change.

Professors Cox and Stephenson are both Met Office Chairs, based at the University of Exeter's School of Engineering, Computing and Mathematics.

In their article, they argue that while climate projections to date have been vital in alerting us to the dangers of climate change, they are not enough to guide our responses. Climate scientists are now being asked to advise on what should be done to adapt to climate change and how we can avoid dangerous levels of change. The current methods of climate prediction, which focus on century-timescale simulations, are too long-term and uncertain to answer these questions and develop policy.

'The reality of human-induced climate change is now clear,' said Professor Peter Cox of the University of Exeter. 'It is vital that we move on to develop the predictive tools that will help people to adapt to climate change and develop policies to limit its impact.'

The paper identifies two distinct requirements for next generation climate prediction. Firstly, it must provide us with detailed decade-on-decade predictions to allow us to adapt to change. Secondly, it should give a probabilistic risk assessment so we can identify the CO₂

emissions cuts required for us to avoid dangerous climate change.

The Intergovernmental Panel on Climate Change (IPCC) uses a variety of possible future scenarios taking into account population growth, economic development and energy use, and to project a range of possible future climates. Professors Cox and Stephenson argue that this process now needs to be reversed, starting with assessing the vulnerability of natural and human systems to climate change and working backwards to determine the policies required to minimise the risk of dangerous impacts.

Professor Cox concludes: 'The expertise exists in the climate modelling, weather forecasting and wider scientific communities to work together to respond to this changing agenda. It is essential that we do so.'

Source: University of Exeter

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