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KlimaCampus Colloquium

Geoffrey Vallis

Response of the General Circulation of the Atmosphere to Global Warming

Global warming is one of the least controversial phenomena in science. We are as sure that it is happening, and what the main cause is, as we are about almost anything. Unfortunately, this knowledge does not translate to being able to predict what will happen to the climate and weather.

The thermodynamic response is well understood. Thus, although the amount of warming remains uncertain, we know the sign of the response and that it is a radiative effect amplified by water vapour feedback. We also understand the changes in thermal structure – the tropopause height will increase and the stratosphere will cool – and such responses are well reproduced by models. However, the dynamical responses that affect the general circulation – the poleward movement of the jets is one example – are less well understood and less consistently reproduced by climate models. We will discuss what the results are, what the mechanisms might be, why models might differ, and what we can do about it.

Geoffrey Vallis from the University of Exeter is invited by Gualtiero Badin from the Institute of Oceanography

Bundesstraße 53, Room 22/23 (ground floor)