

AKE 6: Climatic Response to Emission Scenarios

Time: Monday 17:15–17:45

Location: DÜL

Topical Talk

AKE 6.1 Mon 17:15 DÜL

How soon would we see a benefit from emissions reduction?

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When do we expect to see a response in the climate system after a reduction of greenhouse-gas emissions? In this presentation I will introduce how we can use state-of-the-art global climate models to investigate when and how the global mean surface temperature responds in a mitigation scenario where emissions are reduced, compared to a

non-mitigation scenario where emissions continue to grow.

Determining the time when a benefit from emissions reduction can be detected is mainly affected by two sources of uncertainty: quasi-random internal variability and disagreement between different climate models. While internal variability dominates the uncertainty in the short-term, model response uncertainty dominates in the mid- and long-term. I will separate and quantify the contribution from each source of uncertainty to arrive at an estimate for how soon we could expect to see a benefit from a reduction of greenhouse-gas emissions.