

A Better Future for the Next Generation: Carbon-Climate Feedback Research Based on Earth System Modelling

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Abstract

Earth system modellings (ESM) are useful tools for quantitatively projecting future climate states to produce more accurate scientific facts regarding climate change and achieve carbon-neutral strategies. However, it is found that land processes are the leading uncertainty factor in future climate projections. To reduce the uncertainty of future climate projections, comparisons between observational and modelled Interannual climate variability and relevant terrestrial responses can be good metrics for evaluating emergent model fidelity to the global carbon cycle and carbon-climate feedback. Large-scale climate variabilities such as heat and cold waves and impacts on vegetation/agricultural productivity will be delivered in this seminar. Furthermore, the Arctic amplification issue will also be discussed regarding two-way interactions between the terrestrial ecosystem and climate system.