



Stepping back from the Brink: A Necessary First Step to Advance Understanding of Clouds, Convection and Climate

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Many of the central problems in climate-change research stem from a lack of understanding of how diabatic process regulate atmosphere and ocean circulation systems. In particular, lack of understanding of how clouds and convection couple to the large-scale circulations limits our ability to better constrain key macroscopic properties of the earth system, such as its hydrological sensitivity or the climate sensitivity. In this talk we show how novel, and often very idealized, configurations of complex atmosphere and ocean models can be used to help understand these couplings. The particular example of the interplay of deep convection with atmospheric circulations is highlighted with the purpose of demonstrating the key role of this poorly understood process and to challenge the idea that combining additional complexity actually advances more accurate climate prediction by Earth System Models.