

Climate Modeling Challenges Related to Global Cloud Feedbacks

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Abstract

How clouds respond to warming is the leading source of uncertainties in the estimates of the Earth's climate sensitivity. Through intense research over the last 5-10 years involving evidence from observations, large-eddy simulations, and theoretical concepts, confidence in the likely responses of certain cloud types to warming is increasing. In this talk, I will review the evidence for cloud feedbacks of three cloud types (high-clouds, tropical low clouds, and extra-tropical low clouds), and present the implications of this evidence for how climate models must improve in order to better simulate cloud feedbacks.

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