

Evaluation of subtropical stratocumulus simulation in CMIP5 models

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Subtropical low-level cloudiness has been identified as one of the largest factors contributing to differences in cloud feedbacks among CMIP3 models. Most CMIP3 models did not produce the correct sign of relationships between subtropical stratocumulus cloud amount and various meteorological parameters like sea surface temperature, estimated inversion strength, sea level pressure, wind, and vertical velocity, which suggests they were unlikely to produce the appropriate cloud feedback. In the present analysis, correlations between subtropical stratocumulus amount and meteorological parameters are examined in observations and the CMIP5 models. We will assess whether CMIP5 models correctly reproduce the sign of observed correlations and use that information to establish greater confidence in the CMIP5 model cloud feedbacks.