ABSTRACT

*Evaluation of the Coupled Climate Model Simulations over the Arctic*

--- *Contrasting the Warming in the 1990s versus 1930-50s*

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Although coupled Global Climate Models (GCM) predict the largest annual-mean zonal temperature change to be in the Arctic near the surface (1000-900 hPa), uncertainties are also large, which is shown by largest zonal mean temperature change range from the models (Fig. 9.8 of IPCC Report, Scientific Basis). The PIs will investigate whether coupled climate models which reproduce the late 20th century warm anomalies, also produce mid-century warm anomaly events in the Arctic. Their goal is to access the models' ability to produce Arctic climate and climate change during the 20th century, and to compare the physical mechanisms behind these warming events on a monthly/regional basis through a diagnostic study of the energy budget. This proposal supplements subprojects by G. Ostermeier (NAO/NAM related trends in coupled models) and by Kuzmina (Arctic climate, atmospheric circulation and ocean warming), because the PIs evaluate the models' performance to capture monthly/regional warm anomaly events (+ 4°C) in addition to large-scale circulation changes.

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