@article{Labe2020,
abstract = {The effect of future Arctic amplification (AA) on the extratropical atmospheric circulation remains unclear in modeling studies. Using a collection of coordinated atmospheric and coupled global climate model perturbation experiments, we find an emergent relationship between the high-latitude 1000-500 hPa thickness response and an enhancement of the Siberian High in winter. This wave-number-1-like sea level pressure anomaly pattern is linked to an equatorward shift of the eddy-driven jet and a dynamical cooling response in eastern Asia. Additional simulations, where AA is imposed directly into the model domain by nudging, demonstrate how the sea ice forcing is insufficient by itself to capture the vertical extent of the warming and by extension the amplitude of the response in the Siberian high. This study demonstrates the importance of the vertical extent of the tropospheric warming over the polar cap in revealing the "warm Arctic, cold Siberia" anomaly pattern in future projections.},
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keywords = {Arctic amplification,Northern Annular Mode,Siberian High,climate model,climate variability,sea ice},
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