



Northern Hemisphere blocking frequency and duration in the CMIP5 models

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Northern Hemisphere (NH) blocking climatology is examined using a subset of climate models participating in the Coupled Model Inter-Comparison Project phase 5 (CMIP5). Both historical and Representative Concentration Pathway (RCP) 8.5 integrations are analyzed to evaluate the performance of the CMIP5 models and to identify possible changes in NH blocking frequency and duration in a warmer climate. Comparison with reanalysis data reveals that CMIP5 models can reproduce the NH blocking climatology reasonably well although the frequency of Euro-Atlantic blockings, particularly those with relatively short duration, is significantly underestimated during the cold season. In most models, overestimation of the Pacific blocking frequency is also evident for all durations throughout the year. In comparison to historical integrations, RCP 8.5 integrations show significant decreases in blocking frequency over both the north Pacific and north Atlantic regions, with a hint of increasing blocking frequency over western Russia. There is, however, no noticeable change in the duration of individual blocking events for all durations.