

THE PREDICTABILITY OF NORTHERN HEMISPHERIC BLOCKING USING AN MEAN ENSEMBLE MODEL FORECASTING SYSTEM

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ABSTRACT

Some weather extremes can be the result of atmospheric blocking. Like atmospheric patterns that tend to repeat themselves, atmospheric blocking leads to the stagnation of weather patterns. This repetition can last for several days to weeks. These large-scale quasi-stationary mid-latitude flow regimes can result in significant temperature and precipitation anomalies in the regions that the blocking event impacts. Being able to predict periods of anomalous weather conditions due to atmospheric blocking is a major problem for medium-range forecasting. Analyzing the NCEP Ensemble 500-mb pressure heights (240 hrs.) ten-day forecasts and using the University of Missouri blocking archive to identify blocking event, the duration of blocks, intensity prediction in comparison to observed blocks. Comparing these differences over a one-year period across the Northern Hemisphere has shown the possibility for improved predictability of these blocks and their intensity. Having a better understanding of knowing how long each block will last and their associated anomalies can help society prepare for the damage they can cause. Knowing how to correctly identify blocks is important in improving forecast issues. Lastly, it is demonstrated that the Integrated Regional Enstrophy (IRE) for these events correlates with a block intensity index (BI).