Abstract

A Two-Dimensional Study of Block Onset Locations Using a One-Dimensional Index and GIS [†]

Samuel Mount ¹, Bahtiyar Efe ² and Anthony R. Lupo ^{1,*}

¹ Atmospheric Science Program, University of Missouri, 302 E ABNR, Columbia, MO 63119, USA; samuelmount@missouri.edu

² Department of Meteorological Engineering, University of Samsun, 19 Mayıs, 55420 Samsun, Turkey; Bahtiyar.efe@samsun.edu.tr

* Correspondence: lupoa@missouri.edu; Tel.: +1-573-849-8457

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Abstract: Previous climatologies of blocking from this group using a one-dimensional index showed that in the Northern Hemisphere, blocking onsets primarily occurred in the Pacific Ocean region, the eastern Atlantic, and over continental Asia. In the Southern Hemisphere, the western and eastern Pacific are the two active regions for block onset. The development of technologies such as Geographic Information System (GIS) visualization software mean that ingesting data and then rendering it on a map has become easier and faster. This research group has previously not archived the latitude of onset, making a comparison of onset locations with 2-D indexes difficult. Now, the onset latitude is provided on the University of Missouri Blocking Archive. This work shows that the blocking onset regions are roughly consistent with those found by 2-D indexes, but there are some key differences based on the differences in the information presented. Here, block onset locations are slightly equatorward and upstream of those presented in 2-D indexes. Additionally, there are some differences in the onset locations for more persistent blocks and stronger blocks versus their less persistent and weaker counterparts.

Keywords: blocking anticyclones; climatology; onset location; block intensity; block duration; blocking trends

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