

# Large-Scale Modulation of Subtropical Cyclogenesis in the Central and Eastern Pacific Ocean

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During the Northern Hemisphere cool season, cyclones frequently develop in the subtropical central and eastern Pacific Ocean. These cyclones are known as Kona lows and are an important component of the weather and climate in this region. Though several recent studies have provided case studies of individual Kona lows, no modern synoptic climatology of them has been undertaken.

Here we present the initial results of such a synoptic climatology, constructed using 10 years of gridded analyses from the ECMWF-TOGA data set. The analysis reveals details concerning the frequency and structure of these storms as well as new insights concerning the role of basin-scale and planetary-scale flow patterns on the development of these subtropical cyclones. It is found, for instance, that Kona lows invariably have an extratropical structure. Additionally, substantial month-to-month and intra-annual variability of Kona low frequency occurs with the frequency of Kona events strongly correlated with the Pacific North America (PNA) pattern and the Madden-Julian Oscillation (MJO). Physical explanations for these large-scale relationships are suggested.