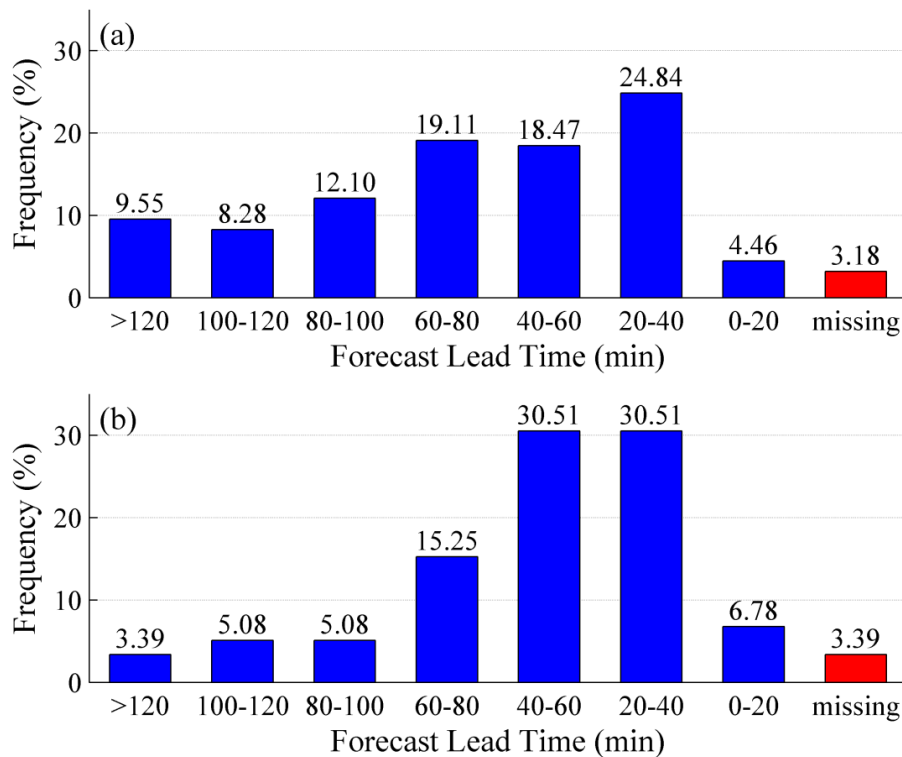


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↑Fig. 1. Frequency distributions of the correctly predicted convective initiation (CI) events at different forecast lead times (blue bars) for a total of (a) 157 daytime and (b) 59 nighttime CI events that occurred over Fujian, China, from July to September 2015. The frequencies of CI events that are not captured are shown in red bar.

- Using high spatial and temporal resolution and multispectral data from the Advanced Himawari Imager (AHI) on board Japanese new-generation geostationary satellite Himawari-8, a standalone convective initiation (CI) nowcasting algorithm was developed in this study. The new algorithm is skillful in predicting the CI occurrences associated with warm-rain processes.
- The 216 CI events were identified from July to September 2015 by the CI nowcasting algorithm, which gives an averaged probability of detection (POD) of 96.82% and 96.61% at daytime and nighttime, respectively.
- The forecast lead time for the CI nowcasting algorithm varied from 14 to 120 minutes with a median value of 60 minutes. A cumulus object continually developed with a more rapid rate had a shorter forecast lead time. If a cumulus object grows slowly after the cloud-top temperature dropped below 10 °C, an early detection of CI is relatively easier and the forecast lead time is longer.