



An updated climatology of explosive cyclones using alternative measures of cyclone intensity

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Using a novel cyclone tracking and identification method, we compute a climatology of explosively intensifying cyclones or ‘bombs’ using the ERA-40 and ERA-Interim datasets. Traditionally, ‘bombs’ have been identified using a central pressure deepening rate criterion (Sanders and Gyakum, 1980). We investigate alternative methods of capturing such extreme cyclones. These methods include using the maximum wind contained within the cyclone, and using a potential vorticity column measure within such systems, as a measure of intensity. Using the different measures of cyclone intensity, we construct and intercompare maps of peak cyclone intensity. We also compute peak intensity probability distributions, and assess the evidence for the bi-modal distribution found by Roebber (1984). Finally, we address the question of the relationship between storm intensification rate and storm destructiveness: are ‘bombs’ the most destructive storms?