

21 November 2019

Gustnadoes observed near Bapsfontein in Gauteng on 20 November 2019

On Wednesday (20th of November 2019) ‘tornadic’ shaped vortices were observed between Delmas and Bapsfontein between 14:00 and 15:00 SAST. These vortices can however be confused with tornadoes or landspouts.



Figure 1: Images of the vortices around Bapsfontein area taken around 14:30 SAST on the 20th of November 2019 (credit: person wants to remain anonymous).

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According to the World Meteorological Organization (WMO) a tornado is a rotating column of air, extending from the base of a cumuliform cloud and is often visible as a condensation funnel in contact with the ground, and/or attendant circulating dust or debris cloud at the ground. The vortices observed in Bapsfontein had no condensation funnel cloud extending from the cloud base to the ground as well as no visible rotation in the cloud base and was not associated with supercell thunderstorms. It is therefore of utmost importance to note that these vortices cannot be defined as tornadoes or a tornado. A landspout according to WMO, is a tornado but is not associated with a mesocyclone as is common in supercell thunderstorms.

Gustnadoes, however, is a very specific type of dust devil but instead of developing in mostly clear conditions, these vortices develop along a gustfront of a thunderstorm as is the case of yesterday's images and videos. The absence of any radar signatures strongly suggests that the vortices in the eyewitness video were not tornadoes but rather gustnadoes due to mesoscale outflow boundaries of thunderstorms in the area and strong temperature gradients.

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