

Interactive comment on “The historic reality of the cyclonic variability in French Antilles, 1635–2007” by E. Garnier et al.

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In my previous post commenting on Garnier et al, I wrote:

"The other Category 5 hurricane they claim for the 19th century is the 1825 hurricane at Guadeloupe. In this instance, we do not have a pressure reading in the eye of the hurricane but only a peripheral pressure reading consistent with a wind speed of about 95 knots. Damage reports are consistent with those of the 1865 and 1891 hurricane so we can assume only a low end category 4 intensity in this instance as well."

I re-checked the French extract from the Dominican Chronicle of 10 August 1825 and the press account indicates that the pressure in Basse-Terre, Guadeloupe fell on 26 July from 28 French inches to 26 inches 5 lines. This is a fall from 29.85 English inches

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to 28.16 English inches (about 758.2 to 715.3 millimeters). This was a peripheral pressure made in the eyewall on the north side of the hurricane center passing south of the city. The wind-pressure relationship for this reading is 106 knots from Landsea et al (2004) assuming the readings are corrected to sea level. The uncertainty in the measurement would provide approximately plus or minus five knots to the estimated maximum wind speed. A figure of 110 knots is estimated for this storm which puts it as a Category 3 major hurricane bordering on the bottom edge of Category 4. A low end Category 4 hurricane is still likely since no calm associated with the eye of the storm is mentioned and the pressure is a peripheral reading.

I also wrote "Likewise, in the 1865 hurricane which the authors have as a category 5 hurricane, the central pressure in the eye of the storm was 717.3mm (956 millibars) which gives an estimated maximum wind speed of 115 knots (~ 213 km h⁻¹) which just puts the storm at the bottom end of Category 4 intensity." The wind speed is in error, as the value from Landsea et al (2004) in this instance is 105 knots (~ 195 km h⁻¹) which equates to a high end Category 3 major hurricane.

These updates do not change the points I made in the initial contribution. Instead, they further highlight the apparent over-estimation bias in wind speed in Garnier et al.

Interactive comment on Clim. Past Discuss., 11, 1519, 2015.

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