Very interesting manuscript. It is well written; show a thoughtful approach and skill on using computational methods. The authors have reviewed the appropriate references and I found them well used. Used methodology looked suitable for testing the proposed hypothesis. The proposed results are provocative and may explain some of the dynamics in a more precise fashion. Because of that I would recommend the publication of the manuscript once it is complemented and corrected on the following issues.

1. Previous studies suggested that enhancement of mesoscale anomalies in the Central Caribbean coincide with the presence of shallower bottom topography (p.e. Andrade and Barton, 2000) when reaching the Beata Ridge. Would the authors analyze that aspect and comment on that regard.

2. Observations along the manuscript with comments or corrections in red as follows:

Page 2 line 18

Here There, model studies have shown that Caribbean anticyclones could influence eddy-shedding events of the Loop Current (Oey et al., 2003; Murphy et al., 1999; Carton and Chao, 1999; Candela, 2003; van 20 Westen et al., 2018).

We will use this set of simulations ~~with the different~~ to study aspects of the seasonal and interannual variability of Caribbean anticyclones.

The considered region was limited to 1.5 × Reddy. This restriction was applied to ensure that the advection of cold filaments and other mesoscale variability was excluded from the analysis. Why excluded?

Page 6 lines 23, 25, 26 and 27 modify Andrade (2003) for Andrade et al. (2003)

Andrade, C.A., E.D. Barton and C.N.K. Mooers, Evidence for an Eastward Flow along the Central and South American Caribbean Coast, *Journal of Geophysical Research*, Vol. 108, C6-3185, June, 2003. EID: 2-s2.0-0141501411

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The Guajira upwelling region is located west of the Cariaco upwelling region, between 69oW and 74oW (Rueda-Roa and Muller-Karger, 2013). Here, the observed average SST is slightly higher (25.5 o 10 C) than in the Cariaco upwelling region (Rueda-Roa and Muller-Karger, 2013). The model displays a similar temperature difference between the two upwelling regions (26.1 oC in Guajira, Fig. 3d)

Consider compare these temperature values with those in Andrade and Barton (2005).

Page 8

In line with observations (Richardson, 2005; Carton and Chao, 1999), we find that the flow in the Caribbean Sea is highly variable (Fig. 4). In the eastern part of the basin, the surface EKE is relatively low (100-300 cm2 s −2 5 , Fig 4a). The EKE increases westward towards a maximum >900 cm2 s −2 at 78oW.

Consider compare these EKE values with those in Andrade and Barton (2000) in this sentence and in the other parts where EKE was commented throughout the manuscript.

Andrade, C.A. y E.D. Barton, Eddy development and motion in the Caribbean Sea, *Journal of Geophysical Research, Vol. 105, (C11.), 26,191-26,201, November, 2000.* EID: 2-s2.0-0034483786

Page 9

The cyclones are less energetic than the anticyclones,

This is not true in the southwest Caribbean where cyclonic circulation is almost permanent. Consider complete the sentence with a location reference.

Page 22 Line 21

…that ~~salinity was~~ observed salinity in the Cariaco Basin was anomalously low in these years

Page 22 Line 33

Together these two processes explain the mesoscale variability in the Caribbean Sea.

Clarify why the wind stress field is not included in this sentence

Page 22 Line 26

(Villamizar G. and Cervigón, 2017), it also impacts the mesoscale variability. no G. in the reference

Page 23 Line 11

Is Juan Manu~~a~~el Sayol,

Y pma, is Ypma