Ocean Sci. Discuss., referee comment RC2
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Comment on os-2020-118

Anonymous Referee #2

Referee comment on "Lagrangian eddy tracking reveals the Eratosthenes anticyclonic attractor in the eastern Levantine Basin" by Alexandre Barboni et al., Ocean Sci. Discuss., https://doi.org/10.5194/os-2020-118-RC2, 2021

Authors analyze eddy activity in the Levantine basin using a Lagrangian approach and in particular the interaction between them in the different defined areas. The Ms. covers an interesting topic and the approach is novel. However there are some issues that authors should better explain before the manuscript being accepted:

(1) There are in the literature a bunch of eddy detection algorithms, some of them based on lagrangian tracking (Mason et al., 2014; Conti et al., □2016; amomng others). . How data from DYNED compare with them?

(2) The manuscript lacks of dynamical information in order to better understand the eddy formation (frontal instability?; flow topography interaction?, etc.) The inclusion of information about MKE and EKE (or MEKE) will clarify this issue.

(3) Authors in the discussion argue that convergence of AE in the southern levantine basin towards the Eratosthenes is clear but some issues are still missing regarding the role of the long living structure in attracting eddies. Does the authors think that advecting viertual particles (from the geostrophic velocities) on advecting eddies (inside and outside its maximum radius) will provide some information about this guess?.

(4) Something that would enforce the work from an oceanographic point of view is to clarify the different polarities (i.e. +1 AC -1 CE) found in the different areas identified.

(5) A better explanation about the tracking algorithm is also desired.

Overall I think the Ms. covers a piece of work that has not sufficiently been addressed in the Eastern Mediterranean Sea. I suggest the authors to perform a deep revision of grammar issues.