

# Review :

## Seasonal lagrangian study of eddies produced at the capes of Kamchatka – *Alexandre L'Her*

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### 1 Main results of the article

Geostrophic velocity fields in the Kamchatka peninsula were derived in order to find the particles' trajectories in the area. The seeded particles in the capes were mostly advected southwestward thanks to the East Kamchatka Current (EKC). In summer, when the EKC is weaker, the anticyclonic eddies – formed by the interaction of the EKC with the capes – are advected southwestward and merge with the Kamchatka eddy.

### 2 Structure of the paper

#### 2.1 Overall content

**1. Is the overall purpose of the study and/or central question clear?** The prupose of this study is clear : what needs to be answered is whether or not the eddies that form in the capes are the ones that merge with the Kamchatka Eddy.

**2. Does the interpretation of the findings answer the overall question of the paper?** The findings and their interpretation answered the problem asked in the introduction.

**3. Is every paragraph and sentence in the paper relevant to the overall question? If no, point to some examples.** The article is very concise and goes straight to the point. Each paragraph has its own place within this paper.

4. Are there portions of the text that could be omitted? If yes, point to some examples. To me, there are no portions that need to be omitted; no information seems irrelevant or out of place.

5. Is the overall organisation of the paper clear and effective? Suggestions for improvement. The overall organisation of the paper is indeed clear and effective.

## 2.2 Individual sections

1. Does the title adequately represent the content of the paper? Suggestions for improvement. The title seems a little too vague compared with the content of the paper. Indeed, I would have maybe titled it something like "Lagrangian study shows merging between the capes and Kamchatka eddies".

2. Does the abstract clearly and concisely summarise the paper and state the main results? Does it contain all needed information (context, need, task, object, findings and conclusion)? The abstract summarises the paper and its findings adequately. There seems to be a lack of 'context' and 'need' though.

3. Does the introduction provide enough context to the readers? Does it state the need for the work? Does it state clearly what has been done to address it? The introduction however gave me enough context and stated the need for the work, even though it is a little bit on the short : I don't know exactly what this paper is changing in this area of study.

4. Does this paper put the progress it reports in the context of existing published work? Is there adequate referencing and introductory discussion? Different references were given in the introduction for what has been done before. The introductory discussion does seem a little short though.

5. Are the material and methods used in the study clearly explained? Can you point out what is special, unexpected, or different in the approach compared to existing published work? Does it contain too many technical details? The methods is placed just after the introduction and clearly explained. It is concise and understandable. The approach is special compared to other published work in that a modified one-dimensional fourth order Runge-Kutta algorithm was used in order to integrate a two-dimensional field, i.e. the position of the particles.

6. Is the results section clearly and concisely written? Are there logical and smooth transitions between sections, subsections and between paragraphs? The results section is clearly and concisely written. I did not have a problem understanding the main findings. Even though there are transitions between sections and subsections, I did not find any 'smooth' transitions between paragraphs. However, there is a logical order to the paragraphs in that one of them does equate to one main idea.

7. Does the conclusion clearly state the most important outcome of the work? Does it address the questions stated in the introduction? Does the conclusion just summarise the results or does it interpret the findings and explain what they mean? The conclusion does state the most important outcome of the work and address the question asked in the introduction. The conclusion did summarise as well as interpret the results ; it did so concisely though.

8. Are the interpretations and conclusions adequately supported by the evidence presented? That is, are the assumptions valid, is the methodology sound, is the evidence adequate, and do the conclusions logically follow? The paper's findings are supported by adequate interpretations and proper conclusions. I think that, based on the method used to integrate the particles and the trajectories found, the resulting evidence and conclusion are sound and logical : **anticyclonic eddies formed in the capes of the Kamchatka peninsula do merge with the Kamtchatka eddy in summer.**

9. Are all parts of the text, references, graphics and tables necessary for the new results and main points to be understood? I feel like *tables 1* and *2* could have been just one big master table. However, all the references, graphics and tables of this paper are needed in order to understand the main results.

10. Are the graphics and tables clear and their captions self-explanatory? The graphics and tables are clear. However, their captions lack explanation. If I were to only look at the graphics and tables, I would not understand the main results of this article.

## 2.3 Sentences and Wording

1. Can you find grammatical mistakes? There a few spelling mistakes, which would account for grammatical mistakes too, e.g. "typically" and "this has also be seen" on *page 2* as well as "northermost" on *page 3*.

There are a few pure grammatical mistakes here and there, e.g. the use of too long noun

phrases such as "the forward integration of the position of seeded particles" on *page 5* or the use of "so" as a causal conjunction (again on *page 5*).

**2. Can you point to sentences that loose you (too long/complex) and do you have suggestions for improvement?** There are no too long or complex sentences.

**3. Are generally the action in verbs, characters in subjects and subjects near verbs? Can you find counter-examples? Can you point out misused nominalisations?** In this paper, I did find that the actions are generally in verbs, the characters in subjects and the subjects near the verbs. I don't have any counter-examples that come to mind while reading the paper again.

There a few instances of misused nominalisations :

- "This required interpolation in space as well as in time" on *page 2* could simply be "This required to interpolate in space as well as in time".
- "Lagrange polynomials could be used for time interpolation" on *page 2* would become "Lagrange polynomials could be used to interpolate time".

**5. Are the paragraphs coherent? Do the first and last sentences of paragraphs match? Can you find counter-examples?** The paragraphs are all two- or three-sentence long ; it is difficult to tell if the first and last sentences match. However, every paragraph I read in this paper are coherent : one paragraph equals one main idea.

**6. Is there an abusive use of passive voice?** There is no abuse of passive voice. The author alternated effectively between active and passive phrasings.

**7. Can you find a lot of useless words/phrases?** I could not find a lot of useless words or phrases.

I found some unnecessary phrasings though :

- "This would clearly show us" on *page 3*.
- "For a better understanding" on *page 4*.

**8. Can you find complex words that could be replaced by simpler ones?** I did not find 'complex' words in this article.

**9. Can you find too complex subjects?** The subjects used are easy to grasp. Even the more 'complex' ones are not that complex.

**10. Can you find inadequately used adverbs / repetition / excessive hedging?** There are some redundant wordings, such as "would", "could", "in particular", "mostly", "this shows", "this suggests" and "indeed", but nothing really major or inadequate that I can think of.

**11. Is the use of tenses (past/present/future) adequate?** The use of verb tenses is accurate, e.g. past when talking about how the experiment was set up, present when drawing the main results from the figures, etc.

## **2.4 Other comments?**

This is more of a personal note about the format, but the way the PDF of the file was set up did not let me highlight certain parts. It was hard to make proper comments on the actual file.