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Discussions

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Interactive comment on "The Influence of Turbulent Mixing on the Subsurface Chlorophyll Maximum Layer in the Northern South China Sea" by Chenjing Shang et al.

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As a small recommendation to improve this manuscript, I encourage the authors to make some changes to the figures to improve readability and avoid distortion of data:

1. Use of colourmaps. I urge the authors to avoid using the same jet style colourmap for several different variables, and instead use a range perceptually uniform colour-blind friendly colourmaps. Many options are available, including matplotlib's default colourmaps and those developed by Fabio Crameri for geosciences. An excellent set called cmocean has been developed specifically for oceanography by Kirsten Thyng et. al.

http://dx.doi.org/10.5670/oceanog.2016.66.

The cmocean colourmaps are described here with many good examples https://matplotlib.org/cmocean/. It appears that the authors are using Ocean Data Viewer to produce several of the figures, the cmocean colourmpas can easily be imported to this software https://github.com/kthyng/cmocean-odv

There has been considerable discussion, going back several years, on the misuses and dangers of the 'rainbow' or 'jet' colourmap. To avoid repetition, I refer readers to a blog post published on EGU 3 years ago on this topic

https://blogs.egu.eu/divisions/gd/2017/08/23/the-rainbow-colour-map/

In addition to making plots colourblind friendly and reducing visual distortion, using intuitive colourmaps for variables (blues for density, greens for chlorophyll) aids the reader in distinguishing subplots of different variables.

2. Reduce unnecessary repetition of plot objects, specifically colourbars and x and y axis labels. Where these are shared (e.g. figures 6) the figure can be made 'cleaner' by placing labels only on the outermost sets of plots and printing only one colourbar per variable. See contrast in figures attached to this comment.

3. Avoid printing variables names and units on plots. These can easily be included in the figure caption, or on the colourbar (see attached figures). This avoid cluttering the plot and obscuring data.

These comments are principally directed at figures 4-7. I have attached two figures made with synthetic data to represent temperature and chlorophyll at two different locations, as a simplified example parts of the authors' figures 4 and 6. Both figures use the same data. Contrast the use of variable-specific perceptually uniform colourmaps, sharing of axis tick labels and colourbars, and fewer graduations of the contour plot.

Interactive comment on Ocean Sci. Discuss., https://doi.org/10.5194/os-2020-26, 2020.
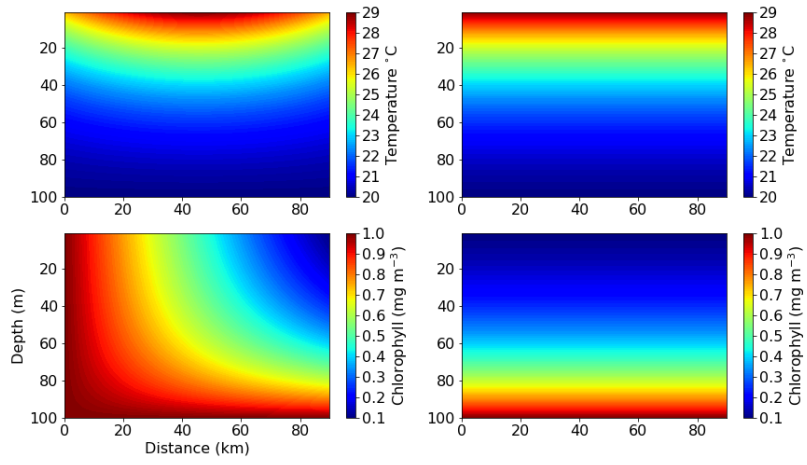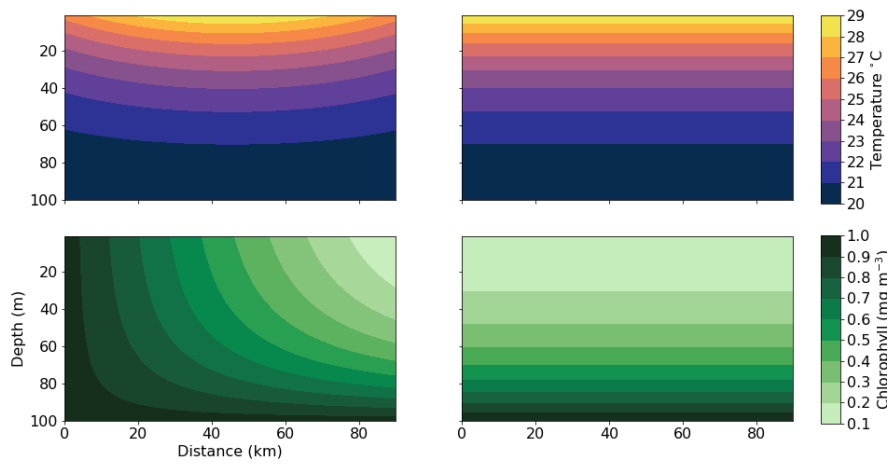
Fig. 1.

C3

Fig. 2.

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