OGC530: Principles of Ocean Circulation

Final project assignment

For a final project, pick a topic that uses one or more concepts from the class and applies it to a question or problem of your choice. It can relate to your thesis research if you wish.

Do a brief literature review on what is known about the topic and analyze a data to explore the question. Here are some ideas – you can use one of these if you wish or just take them as inspiration/repulsion! Don’t worry if these ideas don’t make sense to you at the start of the course – we will learn enough about these topics for you to at least get started. Note that I do ***not***know the answers to these questions – they are genuine curiosities that could lead to possibly interesting explorations.

1. Can thermobaric convection be inferred using Argos floats?
2. Has the zero wind stress curl line changed over the last 30 years?
3. Has the position of the Gulf Stream or other western boundary current changed during the last 30 years?
4. What is the heat loss needed in the Nordic Seas for overflow waters to continue being formed?
5. Estimate the role of eddies in supplying heat (or nutrients, oxygen, or any other tracer) to a chosen region.
6. Consider whether variability of a Deep Western Boundary Current should have a signature in the altimetric sea surface height record.
7. Consider how the residence time of a chosen estuary might change over the course of the spring/neap tidal cycle.

First, write an outline that includes your question, include 4-5 references you plan on reading with a few notes on what they are about, the data set you plan on using, and the analysis you plan on doing. Show that you know how to access the data set and propose how you will analyze it. **This step is due April 1.**

For the final paper (**due May 9**), you will write up your exploration as a paper with the following sections:

1. Introduction and background (include your references here)
2. Data and methods
3. Results and discussion (include graphs here that show how you analyzed the data)
4. Conclusions and reflections on potential future work

In terms of length, I suspect you couldn’t do a great job in fewer than 5 double spaced pages of text (about 2000 words). But please don’t write more than 10 pages of text! (Figures would be outside of this count).