

Review Comments:

The authors have substantially improved the manuscript in response to the previous round of comments. The study presents a well-structured observational analysis of dense shelf water cascading (DSWC) and sediment transport in the Cap de Creus Canyon during a mild winter regime. The multi-platform dataset (moorings, gliders, CTD profiles, and reanalysis products) is robust, and the results provide useful insights into the dynamics, timing, and sediment export processes under mild winter conditions.

Novelty Assessment:

The novelty is somewhat limited because DSWC in the Cap de Creus Canyon under mild winter conditions has previously been described by *Martín et al.* (2013) for the 2010–2011 winter, including estimates of dense water transport (~ 0.3 Sv) and sediment load ($\sim 10^5$ t). The present study adds:

- A more recent mild-winter case (2021–2022) with higher-resolution, multi-platform observations.
- Measurements across both the continental shelf and canyon transects.
- Integration of hydrodynamic and sediment transport data with updated reanalysis products.

At present, the novelty is primarily methodological and contextual rather than conceptual. However, it can be strengthened by including an explicit quantitative comparison of transport and sediment load values between:

1. The present mild winter (2021–2022),
2. The previous mild winter (2010–2011; *Martín et al.*, 2013), and
3. Known strong-winter events (e.g., *Canals et al.*, 2006; *Puig et al.*, 2008).

Such a comparison would position the study as the first to place recent mild-winter dynamics into the broader spectrum of DSWC intensities in the Cap de Creus Canyon, increasing its interpretive value and relevance for understanding climate-driven variability in cascading processes.

Abstract Clarity:

The sentence “...yet its dynamics under mild winter regimes remain poorly characterized” should be qualified to avoid implying a global knowledge gap. Since mild-winter DSWC has been documented elsewhere (e.g., *Mahjabin et al.*, 2019, 2020), and even in the Cap de Creus Canyon (*Martín et al.*, 2013), I recommend revising to this line.

for example it can be written as:

“...yet its dynamics under mild winter regimes in the northwestern Mediterranean, particularly in the Cap de Creus Canyon, have been less comprehensively described and compared to strong-winter events.”

This way:

- It narrows the scope to **region + site** (avoids implying a global knowledge gap).
- It acknowledges **some existing work** (e.g., Martín et al. 2013) but still justifies the new study.
- It sets up the importance of **comparison with strong winters** early in the paper.

Minor Corrections and Consistency Edits:

- **SI unit for metric tonnes** – Use the correct SI symbol: *t* (lowercase). At first occurrence, write as *t* (metric tonnes), and thereafter use *t* alone. Ensure a space between the value and the unit (e.g., “10⁵ t”, not “10⁵t”). Replace non-SI or ambiguous forms such as “metric tons” or “T” where applicable.
- **Hyphenation** – Standardize usage to either *dense shelf water cascading* (no hyphen) or *dense shelf-water cascading* (with hyphen) throughout text and captions.
- **Acronyms** – In Section 3.2.1, correct ECMWF to *European Centre for Medium-range Weather Forecasts* (ECMWF).

Overall Recommendation:

With these relatively minor edits and an expanded discussion comparing the present results with both previous mild-winter and strong-winter events, the manuscript will be well-prepared for publication in Ocean Science. The observational dataset is valuable, the analyses are sound, and the study adds meaningful insight into DSWC dynamics in a mild winter regime for this specific canyon system.