

The paper presents a novel method for detecting the mainlobe of ship clutter using multiple features and machine learning, instead of relying on a single parameter. While the manuscript is well-organized and generally easy to follow, it contains several significant issues that should be addressed before publication.

major revisions:

- **Precipitation Dataset Clarification (Line 110):**

The manuscript mentions that the precipitation dataset was manually extracted. However, it is unclear why this was necessary, especially since the algorithm is intended to work under both clear-sky and rainy conditions. If the algorithm is designed to perform differently depending on weather conditions, this distinction should be clearly stated and justified in the paper.

- **Threshold Justification (Line 136):**

The choice of a 20 dBZ threshold is not explained. Where does this value come from? Additionally, does ship clutter with lower reflectivity (e.g., 15 dBZ) not affect data quality? This requires clarification.

- **Manual Selection of Sidelobe Region (Line 244):**

The sidelobe region is manually defined within a 13.5 km radial range and 15° in the tangential direction. The origin and justification for these values are not provided. Were these same values used later in operational scenarios? Furthermore, what automated method replaces the manual process in operational applications?

- **Case Study Placement (Section 3):**

Two case studies are introduced in the 'method' section. However, they seem more appropriate for Section 4, where other case analyses are presented. Additionally, the purpose of second case (Fig. 8) is unclear—what characteristics is it meant to highlight, and why was it chosen?

- **Discussion Section Issues:**

The final paragraph of the discussion section appears to be more suitable for the introduction or summary. Once this paragraph is removed, the discussion becomes quite short. It would benefit from more in-depth coverage of how the algorithm operates in operational case—especially regarding the parts that were handled manually (e.g., sidelobe removal). Does the algorithm only remove sidelobes near the mainlobe, or is there a more general solution? These points should be explicitly addressed.

- **Operational Performance for Winter Events:**

Since the algorithm is intended for operational use, it is strongly recommended to include at least one winter precipitation case to demonstrate its robustness in varying weather conditions.

minor correction:

- Figure 3 is explained in the introduction but appears on page 4. Consider repositioning it closer to the relevant text.
- In several instances, figures are referenced before they are introduced or explained (e.g., Line 321: "*This selective filtering approach is demonstrated in Figs. 11b and 12d...*"). However, Figure 12 is not described until Line 345. This disrupts the flow and may confuse readers. Please revise for consistency.
- Fig 12c: it is not clear if the plot shows the difference 'before-after' filtering or vice versa