

The manuscript entitled “*Application of radar remote sensing for cyclone damage mapping in Bangladesh: A coherence-based approach*” presents an important application of multi-temporal Sentinel-1 SAR coherence analysis for cyclone damage assessment in coastal Bangladesh. The study is timely, scientifically relevant, and operationally significant for disaster risk reduction in data-constrained coastal environments. The integration of coherence-based change detection with inundation mapping and field validation is commendable, and the manuscript demonstrates strong potential for publication after revision.

Major Comments

1. The novelty of the study should be articulated more clearly in the Introduction section. Although the manuscript discusses coherence-based approaches, the specific advancement over previous SAR-based cyclone damage studies remains somewhat unclear. A dedicated paragraph highlighting methodological novelty and operational contribution would strengthen the paper.
2. The coherence threshold selection procedure requires additional explanation. The manuscript mentions threshold calibration using a small sample dataset, but the exact criteria, statistical basis, and sensitivity analysis should be described more explicitly to improve reproducibility.
3. The validation strategy should be strengthened. Field validation was conducted only for Cyclone Remal, while earlier events relied on secondary information. Please discuss the limitations and uncertainties associated with cross-event validation more critically.
4. The manuscript would benefit from additional quantitative comparison between coherence loss and inundation extent. Including overlap statistics or percentage agreement between inundation and coherence-based damage zones could improve interpretation.
5. Several sections of the Discussion contain repetitive explanations regarding coherence decline and recovery. Consider condensing these parts and emphasizing broader scientific implications and transferability of the framework.

Minor Comments

1. Improve grammatical consistency throughout the manuscript, particularly article usage and sentence structure in the Introduction and Discussion sections.
2. Figure labels and legends should be enlarged for better readability, especially in Figures 4 and 5.
3. The manuscript should maintain consistency in terminology such as “coherence loss,” “decorrelation,” and “surface disturbance.”
4. Add a brief explanation of why VV polarization was selected instead of VH or dual-polarization combinations.
5. Some references require formatting consistency according to journal style.

Overall Recommendation

The manuscript presents a valuable and operationally relevant contribution to cyclone damage assessment using SAR coherence analysis in Bangladesh. The methodological framework is promising, and the field validation significantly strengthens the study. However, several

methodological clarifications, stronger discussion of novelty, and improved quantitative interpretation are necessary before the manuscript can be considered for publication.