Point-by-point Response to Referee Comments

We thank the reviewers for taking the time to read over and give constructive feedback on our paper titled *“Experimental and theoretical evidence of universality in superfluid vortex reconnections",* submitted to PNAS. Please see below the point-by-point response to the comments made by the reviewers.

Referee 1 Corrections

1. 1 | 1 | 57 – Fixed typo
2. 1 | 1 | 58/59 – Fixed typo
3. 2 | Figure 1 – Emphasised that it is the vortex cores which are represented by the visualisation of red tubes.
4. 3 | 2 | 371 - Fixed typo
5. 4 | 1 | 403 – We thank the referee for making this comment, we added lines 413 - 429 to clarify the original statement. We have inlcuded a discussion on the relevance of normal fluid finite amplitude perturbations in the dynamics of superfluid helium. We have included references to support these new comments.
6. 4 | 2 | 461 – Corrected grammatical mistake.

Referee 2 Corrections

We thank the referee for this comment, it is indeed true that the generation of Kelvin waves play an important role in the post reconnection dynamics, especially when interacting with the normal fluid component, which has been a recent subject of our studies [1,2]. To reflect this, we have added text (lines 156-162) to the manuscript to acknowledge the generation of Kelvin waves as a fundamental hydrodynamic process, and we have inserted additional citations to highlight the work performed studying the interplay of Kelvin waves with the normal fluid.

[1] Stasiak, Piotr Z., et al. , J. *Low Temp. Phys.* 215.5 (2024): 324-335.
[2] Stasiak, Piotr Z., et al., *arXiv preprint arXiv:2503.04450* (2025).