

## Response to the Reviewer's comments - review 2

Investigation into Instantaneous Centre of Rotation for Enhanced Design of Floating Offshore Wind Turbines.

Dear Reviewer,

The authors would like to express their gratitude to the Reviewer for the second review of the paper.

**Comment** "In response to my previous comment nr. 5, the authors said that potential theory loads were computed for the different designs, and that the results in sections 4-6 were updated. However, section 2.3 of the updated manuscript still says that the results assume no change in potential theory loads. Also, the discussion in section 4 does not have any mention to updated potential theory loads. This reviewer still believes that the credibility of the results is significantly impaired by the lack of a discussion on how variations in the design parameters could affect the hydrodynamic loads (and thus the ICR). If this assessment has been performed, as indicated in the response, why they are not discussed in the updated manuscript?"

**Response** Thank you for catching the mismatch between the response and the updated manuscript. The original paragraph about the potential coefficients not being updated had been left in the draft by mistake and has now been removed. The potential coefficients are recomputed for each design variant, as reflected in the updated results. The text now clearly describes the hydrodynamic model:

"The semisubmersible platform's offset columns, heave plates, and main column are modelled using a hybrid approach (potential and Morison). The potential coefficients are obtained with pyHAMS BEM solver (NREL, 2024b), as implemented in RAFT (Hall et al., 2022). The slender pontoons and cross-braces (diameter of 1.6m) are treated with a Morison-only approach, with hydrodynamic coefficients listed in Table 1. Second-order hydrodynamics are not considered."

Thank you for your vigilance.