

Dear Dr. Johannes Fürst and Referees,

We are delighted to hear that you find our paper suitable for publication, and we thank you for the joint effort in improving its quality.

In addition to the changes proposed we went over the LST measurements in Table 2 and Table 3 more carefully and adjusted some numbers slightly. These changes were small and did not change any conclusion, but we now have full confidence in the numbers reported. Furthermore, we found a mistake in Figure 8, where we accidentally only used one nonlinear iteration. The effect of this was to alter the appearance of the instability but fortunately did not affect the time-step size at which the spurious oscillations occur.

Please find our point-by-point response below, and as before all line numbers refer to the marked-up manuscript.

Sincerely,

André Löfgren, Josefin Ahlkrona, Thomas Zwinger, Peter Råback, and Christian Helanow

Reviewer One Comments

No further comments.

Comments

Reviewer Two Comments

COMMENT 1: I noticed a typo at line 169. There is a reference to eq. (15) but I think it should be eq. (14).

RESPONSE: Thank you for spotting this, it is now fixed.

COMMENT 2: I don't like the notation $(\cdot)_{\Omega}$ for integrals over Ω , and I would have prefer to see the standard notation for dot-product used in many finite elements and analysis books. That is, I would write $(f, v)_{\Omega}$ for $\int_{\Omega} f v dx$, when the integral is indeed an L2 dot-product of f and v . But I'm OK if the authors prefer to use their notation.

RESPONSE: Thank you, we now follow your suggestion and use the dot-product notation. Please see Sections 3.2 - 3.4.

List of changes

Below is a complete list of changes made to the manuscript.

Requested changes

1. **Eqs 11, 12, 15, 16 and 17:** Switched to dot-product notation.
2. **Line 138:** Removed definition of $(\cdot)_\Omega$.
3. **Line 140:** Rephrased sentence slightly.
4. **Line 160:** Wrote out integral explicitly.
5. **Line 164 and 169:** Fixed reference to Eqs. (14) and (15).
6. **Line 184:** Wrote out integral explicitly.

Unsolicited changes

1. **Table 2 and 3:** Updated LST values.
2. **Lines 267–271:** Slightly modified paragraph to reflect new values in Table 2.
3. **Lines 324–325:** Changed reported numbers to reflect new values in Table 3.
4. **Figure 6:** Combined panels into one figure.
5. **Figure 8:** Regenerated figure showing sloshing instability using multiple nonlinear iterations.
6. **Line 385:** Clarified where instabilities are seen in Figure 8.