

Dear Ann Fridlind,

Thank you for your feedback and the opportunity to revise our manuscript. We appreciate the insightful comments and suggestions provided by you and the reviewers, which have greatly helped us improve the quality of our work.

The requested text revisions have been made as follows:

Regarding unstable motion:

- The following text has been added to Section 3.2.2, after the introduction of the sine wave fit (line 294):
"All unstable motion presented in this study was observed to be periodic and is approximated through equation 4. We observed no complex tumbling, chaotic fluttering, or behaviour with significantly non-sinusoidal motion to it. However, we note that there are some experiments in the study in which additional (weaker) modes of oscillation, in addition to the primary frequency, seem to be present. For example, the transitional case in Fig. 5c has an amplitude that fluctuates slightly in time, at a lower frequency than the primary mode of oscillation captured by the simple single-frequency fit. We did not attempt to capture these finer details in our fitting procedure."

Regarding particle reconstruction the following has been added to the section on projected areas, line 384:

- "In fact, the observed projected area occasionally exceeds that of the projected area of the particle when horizontal (i.e., the ratio in Figure 8b slightly exceeds 1): this can only be achieved through the influence of the finite thickness of the particle."

Re I^* : The following has been added as a note at the end of the Supplementary Material:

- "Although alternative mass-dimension relationships exist, the mass-diameter relationship from Nakaya and Terada (1935) was chosen arbitrarily to illustrate the order of magnitude approximation for reference, providing an estimate of the possible range of values. The I^* estimation formula from Kajikawa (1992) was selected for its practical advantage over more complex relationships, requiring only the mass and diameter of the crystal without detailed knowledge of the full mass distribution around the snowflake."

Re Figure 13: The following sentence has been added to the end of Section 3.3.3 (Velocity fluctuations) (line 470):

- "Other relationships between the variables mentioned in this study were also explored; however no clear patterns or simple relationships were evident."

Re Strouhal numbers: The following sentence has been added to the second paragraph of Section 3.3.4 (Strouhal numbers) (line 485):

- "No systematic relationship was found between either Strouhal number (St_{θ} or St_{ϕ}) and area ratio."

Re use of cylinders as reference:

- Upon further consideration, we have omitted the paragraph on vortex shedding and its relation to Strouhal numbers. The connection to vortex shedding behind cylinders was deemed too speculative. To maintain clarity, we have decided to report the results directly and avoid potential confusion in the text.

In addition, the accidental inclusion of coloured text in the manuscript was removed and replaced with black text.

Please let us know if there are any further changes or clarifications needed. Thank you for your time and consideration.