Reviewer 2

The authors analyze the movement of a spherical object in granular media vibrating with periodic oscillations. The paper is interesting and well written.
Thank you for the supportive appraisal.

I found only some typos e.g.:

1: section 2.1 Capital letter.
Thank you! Corrected to ‘Simulation method’.

2: Section 2.3 lines 84 and 92 dimensions of the box do not agree. Please change!
There is no discrepancy and this is only a misunderstanding. The container *is* 1.3m high, extending from z=-0.5m to z=0.8m, but the bed particles fill it only up to z=0.5m, with 0.3m left unfilled. Figure 1 has been modified to make this clear.

3: Line 145 and 147 Do you mean figure 4?
Correct! These have been modified to Figure 4.

4: line 153 erase doubled ‘that’.
Thank you! Corrected.

5: Section 4. For me "Conclusions and future research" sounds better.
We changed, following this suggestion, and moved the first paragraph of section 4 to later in the section.

6: Author contribution P.L. not L.P.
The reviewer appears to know our names better than us; this has been corrected.