Dear Anonymous Referee,

We thank you for your helpful comments and analysis. We have read your suggestions very carefully and have responded to each one below in bold font. All revised portions of the manuscript have been given in red font.

1, (16-17-18) sentence is not clear: the resolution of the tests results shows...the word 'resolution' should be precised as the measuring system resolution. As said, it can be confused with the resolution of the system of equations.

2, (44) (53-54) (238-240) precise the definition of accuracy and precision to avoid misunderstanding.

Response:

Yes, these instances are very confusing. We apologize for our oversight. These two instances were addressed in the revised manuscript.

3, (66-67) I don't see the relation between the FB –cart motion matching and the time-displacement coordinates measurements. A global schematic of the system could help.

Response:

Yes, the meaning is very unclear. We have added a new figure (Fig 1.) in the revised manuscript to illustrate better the structural relationships between the laser beam, the FB, the cart, the servo motor PVIS, and the reference corner-cube.

4, (68-71) sentence comprehensible but should be split in two more concise sentences.

Response:

We apologize for this oversight. This has been addressed in the revised manuscript.

5, (80) applies no closed-loop feedback at any point: need some explanations

Response:

Indeed, this issue is not particularly clear. We have added additional explanation in Subsection 2.1 of the revised manuscript.

6, (120-121) explain why: Most of the useful signals related to the disturbance error of the absolute gravity measurement in Z(s) can be recovered by the synchronously output vibration signal X(s). in relation with the previous paragraph.

Response:

Yes, this is not entirely clear. We apologize for our oversight. This issue has been clarified in Subsection 2.1 of the revised manuscript.

7, (217) [6] has to be explicated

Response:

We apologize for this typing error. This issue has been addressed in the revised manuscript.

8, (219-221) explain the choice of the parameters and the effects in the genetic algorithm.

Response:

We apologize for our failure to clarify why we applied a genetic algorithm for solving the VECA,

and to explain how the solution process is initially conducted. We have clarified these issues in Subsection 3.1 of the revised manuscript.

9, (222-224) again, a short explanation of genetic algorithm could help the comprehension and shows the advantages of the algorithm with respect to the classical least squares method.

Response:

This issue was addressed according to the preceding response.

10, (269-273) are copy-paste of (13-18), should be reformulated to avoid the exact repetition.

Response:

We appreciate the reviewer's opinion on this issue. However, we must conclude that an exact repetition of text from the main body of the paper in the abstract is not a particularly onerous condition. We do hope that the reviewer will overlook this small issue since it bears no reflection on the work itself.

12, The following are purely typing corrections:

(14) (1 Gal = 110-8m/s2) the number 2 should be exponent.

(42) technology

(64) servo motor installed on the outside of the drop chamber.

(66-67) will be are introduced.

(74) is are connected

(93) separate the comma from the equation to avoid confusion with prime.

(103) no space after 'the intrinsic frequency'

Response:

We apologize for the many typing errors. These issues have been corrected in the revised manuscript. However, we find that the issue cited at line (42) in the original manuscript does not represent an error. In addition, the issue cited at line (103) involves a space between "the intrinsic frequency" and its mathematical expression $\omega_0{}^2 = \frac{K}{M}$**, which may have been garbled in the original manuscript.**