

// 5. FALLING BALL

Opposition - Klara Stojčević

Team Croatia



The problem

- An electronic balance (1) is connected to a PC (5) in order to record the time dependence of the measured weight. A light frame (4) is mounted on a tall beaker (2) filled with water. The frame has a holder (3) allowing controlled release of a small ball such that it falls into the water. The beaker is placed on the balance as depicted in the Figure. Investigate how the readings of the balance reflect the different phases of the motion of the ball.

Clarifying questions

- Why did you use PMS 300?
- What is the difference of PMS and water?
- What are the parameters you measured that influenced the experiment?
- How does the water density affect the results?
- How much water did you use?
How does the amount of water affect the experiment?

The solution

- The solution lacked parameters, there is no hypothesis that was confirmed by the experiments, and the amount of experiments was a bit too small. Otherwise, the presentation was really good and well put. The graphs were neatly explained, but more parameters for them could have been tested. Reporter only used one amount of water for example of lacking parameters. Lack of named literature.

Points for discussion

- Which are the most important parameters?
- How is the scale affected when the water
 - A) hits the surface of the water?
 - B) is travelling down the water?
 - C) hits the bottom of the beaker?
- Can you draw the forces affecting the ball in the previously stated momentums?

Conclusion

- The problem was solved, but not with enough parameters tested.