Simulated Newton's Second Law Lab

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Introduction

We perform an experiment to verify Newton's second law of motion.

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F = ma
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To do this we perform two types of experiments:

1. Keeping everyting else constant, change Force (F).
2. Keeping everything else constant, change mass (m).

Methods

Materials:

1. Rocket with adjustable force (10N, 20N, 40N).
2. Balls of various mass (1kg, 2kg, 4kg).

Setup

1. Lay the mass on a friction-less surface and attach a rocket to it.
2. Ignite the rocket and measure and note the velocity at various times.

Data Analysis/Graphs

(See attached spreadsheet "./Week 2/Second Law.ods")

Discussion of results

We see that our observed data fits the model very well with the predictions made by Newton's second law of motion, with R^2 value extremely close to one. We don't see or expect any discrepancies or errors in data gathering.

Conclusion

The experiment was very successful, and we have with some certainty verified Newton's second law of motion.