

JMH Physics: Coefficient of Kinetic Friction of eRevo Tires

Purpose: To determine the coefficient of kinetic friction between the eRevo tires and two surfaces: school hallway, parking lot pavement, and dirt, etc.

Materials: eRevo, metre stick, timer, scale

Measured Variables: Stopping distance, stopping time, eRevo's mass

Calculated Variables: Acceleration, initial velocity, force of friction, coefficient of friction

Procedure

- Before driving, set up a marker so you know where to hit the brakes with the eRevo.
- While driving the eRevo hit the brakes so that it skids to a stop (the tires must lock). Someone has to use a stop watch to measure the breaking time (this could happen quickly).
- Measure the stopping distance.
- Repeat the above steps two more times.
- Repeat the above for the other surface.

Calculations

- Show, once, how each of the following were calculated and summarize all calculations in a data table.
- Initial Velocity (just before hitting the breaks)
- Acceleration
- Force of friction (use Newton's second law)
- Normal Force
- Coefficient of kinetic friction
- Take the average (should be three for each surface)

Summarize your lab in a conclusion and don't forget your sources of error.