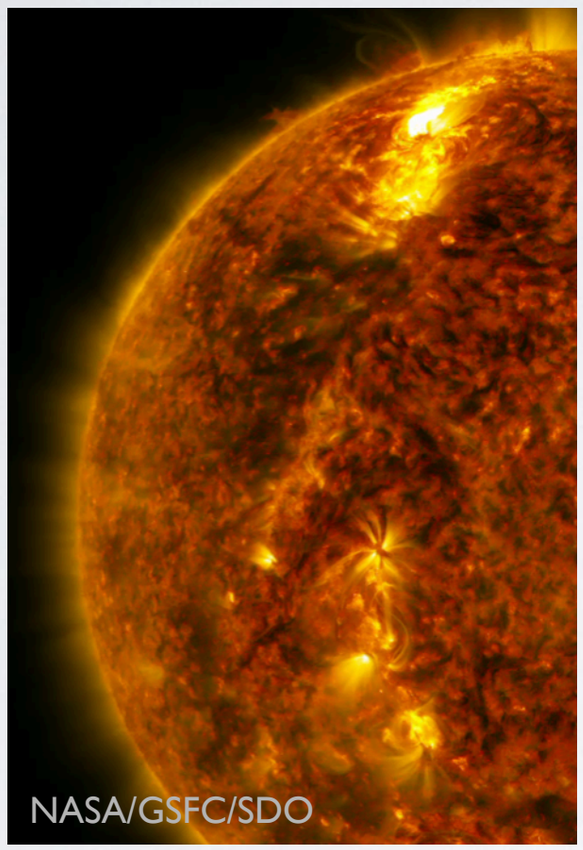
Week 1 - #2

Newtonian Mechanics — Single Particle (I)


NASA/GSFC/SDO


SpaceX Falcon 9 Rocket Launch

Today: Ch 1 - Ch 2.4

Next Class: Ch 2.5-2.7

Ji-hoon Kim (Seoul National University)

Classical Mechanics I (Spring 2026): Quiz #1

— [open book and open note, but no cellphone or laptop, drop it off as you leave the class] —

Please write down your name and student ID in the top right corner. (0.0 pt: no paper found with your name / 0.5 pt: paper found with your name and some answers / 1.0 pt: good answers)

1. Thornton & Marion, Problem 2-6
2. Thornton & Marion, Problem 2-32
3. What is Lorentz Force? (As in many future quiz problems, your textbook has the answer already!)

2-6. In the blizzard of '88, a rancher was forced to drop hay bales from an airplane to feed her cattle. The plane flew horizontally at 160 km/hr and dropped the bales from a height of 80 m above the flat range. **(a)** She wanted the bales of hay to land 30 m behind the cattle so as to not hit them. Where should she push the bales out of the airplane? **(b)** To not hit the cattle, what is the largest time error she could make while pushing the bales out of the airplane? Ignore air resistance.

2-32. Two blocks of unequal mass are connected by a string over a smooth pulley (Figure 2-B). If the coefficient of kinetic friction is μ_k, what angle θ of the incline allows the masses to move at a constant speed?

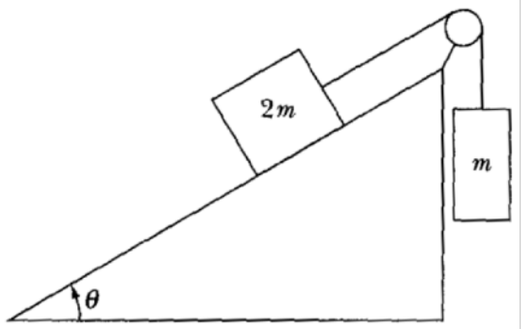


FIGURE 2-B Problem 2-32.