

Announcements

- Take the Piazza MATLAB workshop poll
- Quiz 5 next week – CBTF
- TAM210 last lecture: Friday, Nov. 3rd
- TAM210 CBTF Final: Nov. 9-12
- TAM211 CBTF Final: Dec.14-20 (tentative)

□ Upcoming deadlines:

- Thursday (10/26)
 - ME HW17
- Tuesday (10/31)
 - PL HW18



Friction

Friction is a force that resists the movement of two contacting surfaces that slide relative to one another. This force acts tangent to the surface at the points of contact and is directed so as to oppose the possible or existing motion between the surfaces.

Dry Friction (or Coulomb friction) occurs between the contacting surfaces of bodies when there is no lubricating fluid.



Figure: 08_COC

The effective design of each brake on this railroad wheel requires that it resist the frictional forces developed between it and the wheel. In this chapter we will study dry friction, and show how to analyze friction forces for various engineering applications.



Dry friction

- Consider the effects of pulling horizontally (force \mathbf{P}) a block of weight \mathbf{W} which is resting on a **rough** surface.
- The floor exerts an uneven distribution of normal forces ΔN_n and frictional forces ΔF_n along the contacting surface.
- These distributed loads can be represented by their equivalent resultant normal forces N and frictional forces F

