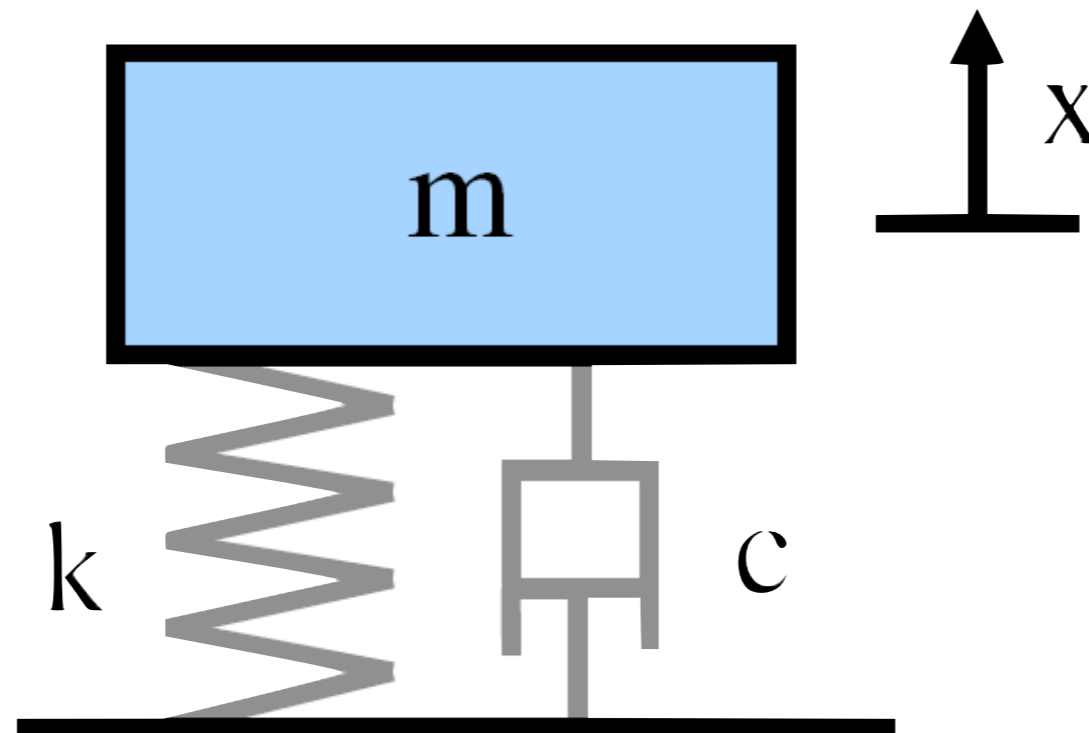


Lecture Two: Part I

Mass Spring Damper System: An intuitive look

Mass Spring Damper



Created by Wikipedia user lzyvzl

- Mass (m) Attached to hook's law spring
- Recall $F_s = -kx$
- Damping $F_d = -c \, dx/dt$

Exercise

- What happens with no damping when the spring is pulled?
- Can you describe the motion as a function of time?
- How do the mass and spring constant values effect the motion?

Let's Take a Look

- <http://www.lon-capa.org/~mmp/kap13/cd361a.htm>

Exercise

- What happens if there is damping?
 - What is the behavior of the system?
 - What is the relationship between the amount of damping and the behavior?
- Can you describe the motion as a function of time?

Let's Take a look

- <http://links.math.rpi.edu/applets/appindex/springmass.html>

“Homework”

- Find three real world applications for MSD's
- How are K (the spring constant) and C (the damping co-efficient) chosen to produce a desired Behavior?