

Physics for future Presidents

Department of Physics, Carnegie Mellon, Fall 2019, Deserno

Homework 12 *Draft* of the essay is due in recitation on Thursday, Oct. 31st
Finalized essay is due the next day, in the lecture on Friday, Nov. 1st

Sound is a wave

You have learned in class that *sound is a wave*. Surely, everyone has heard of sound waves, so it must be true, right? But we use the word “waves” in many non-physics contexts as well. We feel a wave of emotions. A friend says good-bye with the wave of her hand. Are those also physics-waves?

Indeed, when you tell a friend about sound being a wave, your friend is skeptical and requests proof and some convincing explanation. That’s the task of this week essay.

Convince your friend that sound is a wave. What does this statement mean in the first place? What is a wave? What would we have to show to support the claim that something, anything, is a wave? Give at least two different examples of properties which sound has that support your case. And don’t just name-drop. Explain what that property is, how it comes about, and how it strengthens your argument.