PWM Output from Arduino

EAS 199A Notes

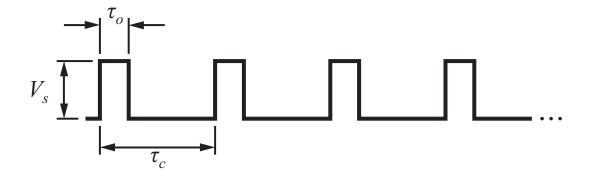
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EAS 199A: PWM Output from Arduino

Motivation

- 1. Arduino board cannot create an arbitrary voltage output
- 2. Pulse-width modulation (PWM) is a common technique for supplying variable power levels to "slow" electrical devices such as resistive loads, LEDs, and DC motors
- 3. PWM is versatile and is very easy to use on an Arduino board

PWM is a variable-width pulse train from a digital source



The effective voltage is

$$V_{\rm eff} = V_s \frac{\tau_o}{\tau_c} \tag{1}$$

where au_o/ au_c is called the *duty cycle* of the square wave pulses.

The analogWrite command produces PWM output from an Arduino