**Electromagnetic Braking**

**HW 1**

It is a type of braking or dampening system which reduces the rotatory motion of an object through electromagnetic induction. Most of the braking systems that are used today are based on mechanical process through friction, which converts the kinetic energy to heat energy. This reduces the efficiency of the system when used over time due to wear and tear generated by the friction. Electromagnetic braking works on the principle of emf induction. This type of braking can be used in various applications that utilize rotatory motion such as servo motors, Packaging machinery and escalators.

When a rotating metal object such as copper is placed near a magnet, eddy currents are introduced into the object which develops its own magnetic field. The direction of this current, which is given by Lenz’s law, is in such a way that it opposes the magnetic field which induced it. The magnetic flux generated due to these eddy currents produce a retarding braking force which then slows down the rotatory motion. This method of breaking does not involve contact with the magnet, so materials are not damaged over time.

**References**

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