6.02 Lecture 2 – Wires and Models

• Non-Ideal Transmission
  - Example wires and signal impact
  - Intersymbol Interference
  - Eye Diagrams

• Modeling Wires
  - Causality
  - Time-invariance
  - Linearity

• SUPERPOSITION
  - Demonstrating why it is so super
Types of Real “Wires”

**IC Interconnect**

**Printed Circuit Board**

**Transatlantic Cable**

Slow Response

Ringing

May also have long delays (Receiver does NOT know)
Intersymbol Interference

Long Bit Period (slow rate)

Short Bit Period (Fast Rate)
Eyes for Ringing versus Slow System

Medium Bit Period

Short Bit Period
Superposition