# Modeling Variable Throughput Channels with Stochastic ODEs

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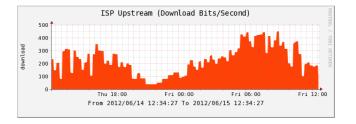


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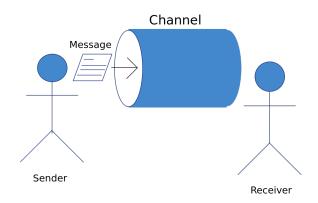
#### Introduction



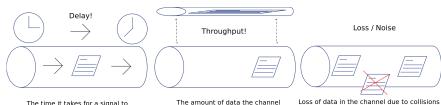
Stochastic differential equations are often used to model the nondeterministic behavior of network channels in computer science.

## Networking Basics

A **Channel** is the medium through which a message propagates from sender to receiver.



### **Channel Characteristics**



The time it takes for a signal to propagate through the channel

The amount of data the channel can transmit per unit of time

Loss of data in the channel due to collisions with other signals, environment, etc.

## Demonstration

