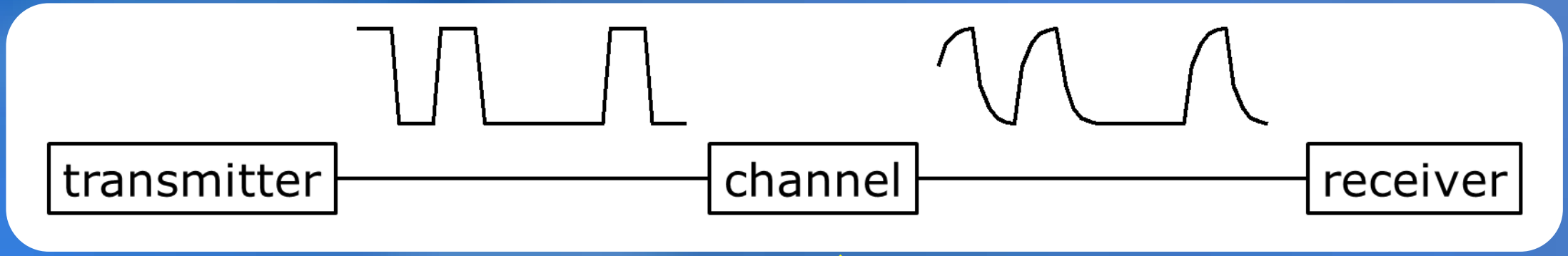
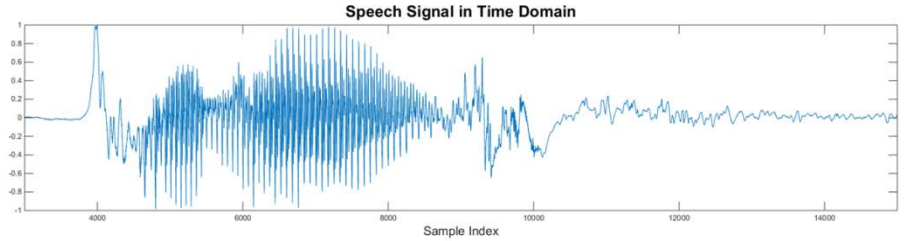
Frequency Analysis



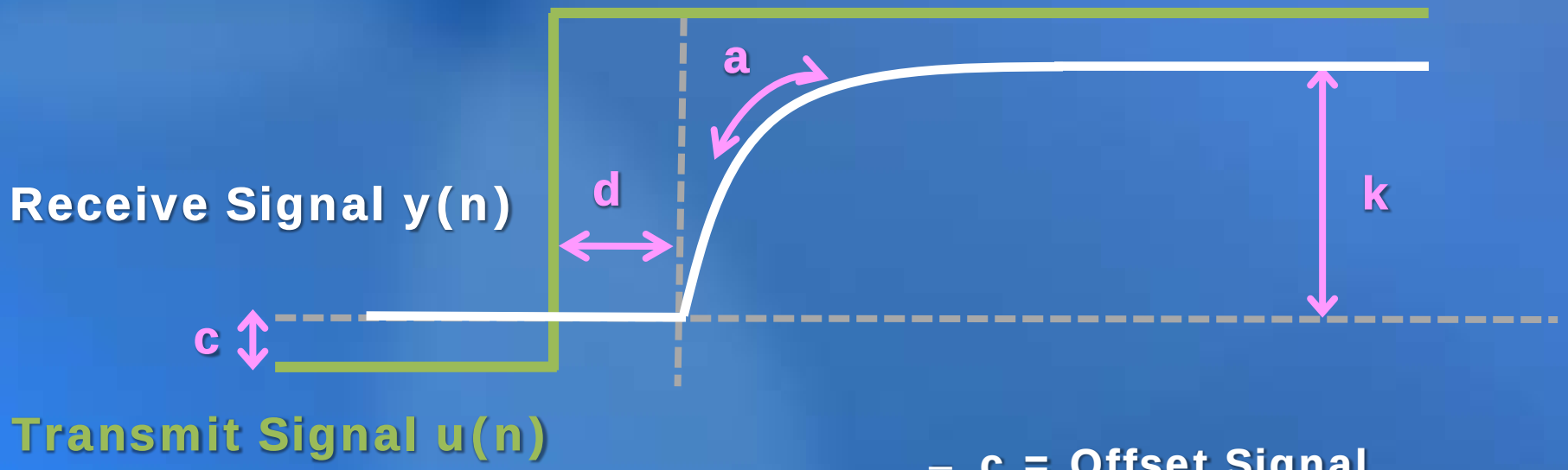
Frequency Analysis for Signals



Characterize the channel in frequency domain

How will the channel affect different frequency components of the signal?

Step Response in Time Domain

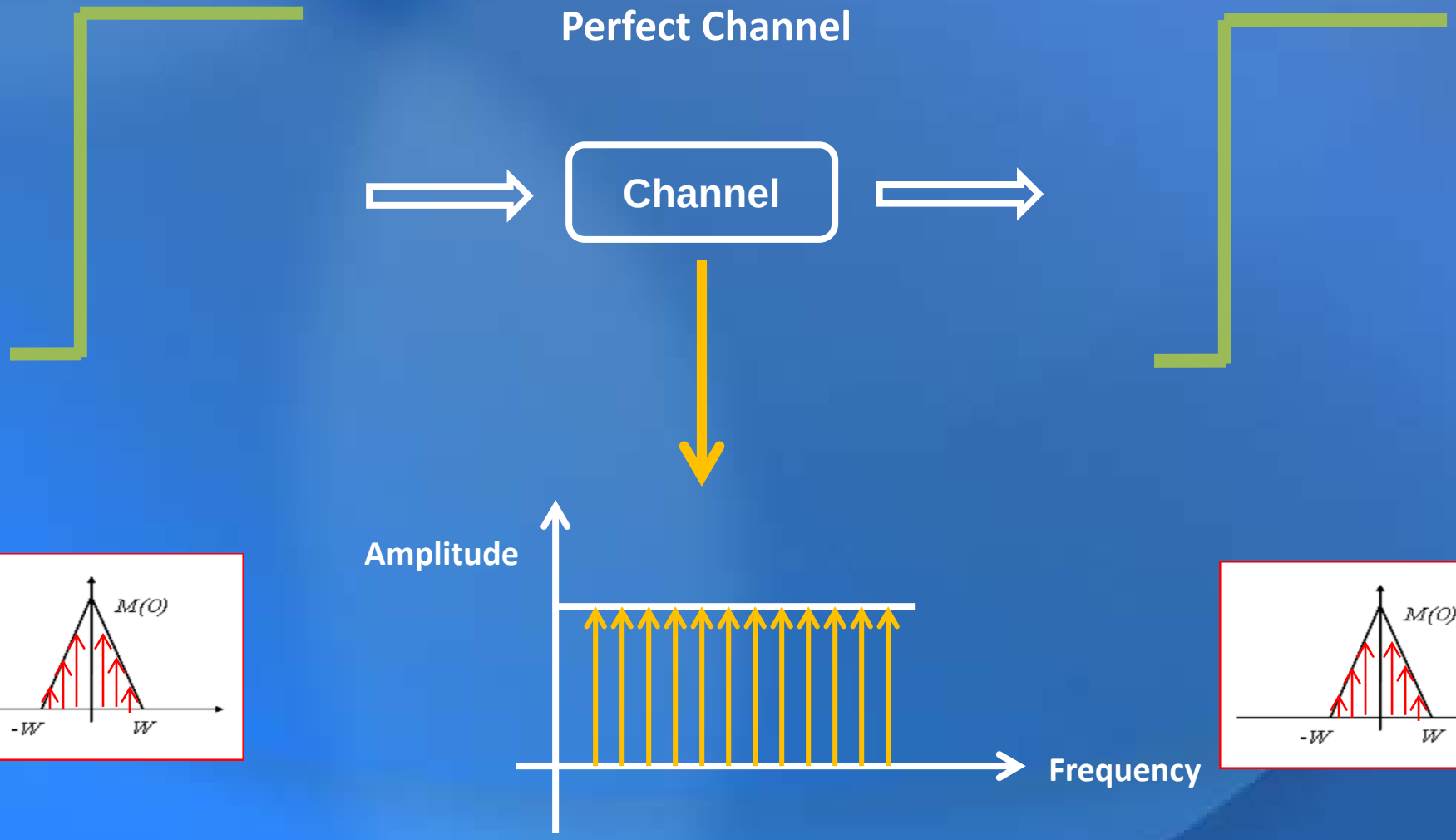


- c = Offset Signal
- d = Time offset
- k = Range (k < 1)
- a = Exponential response

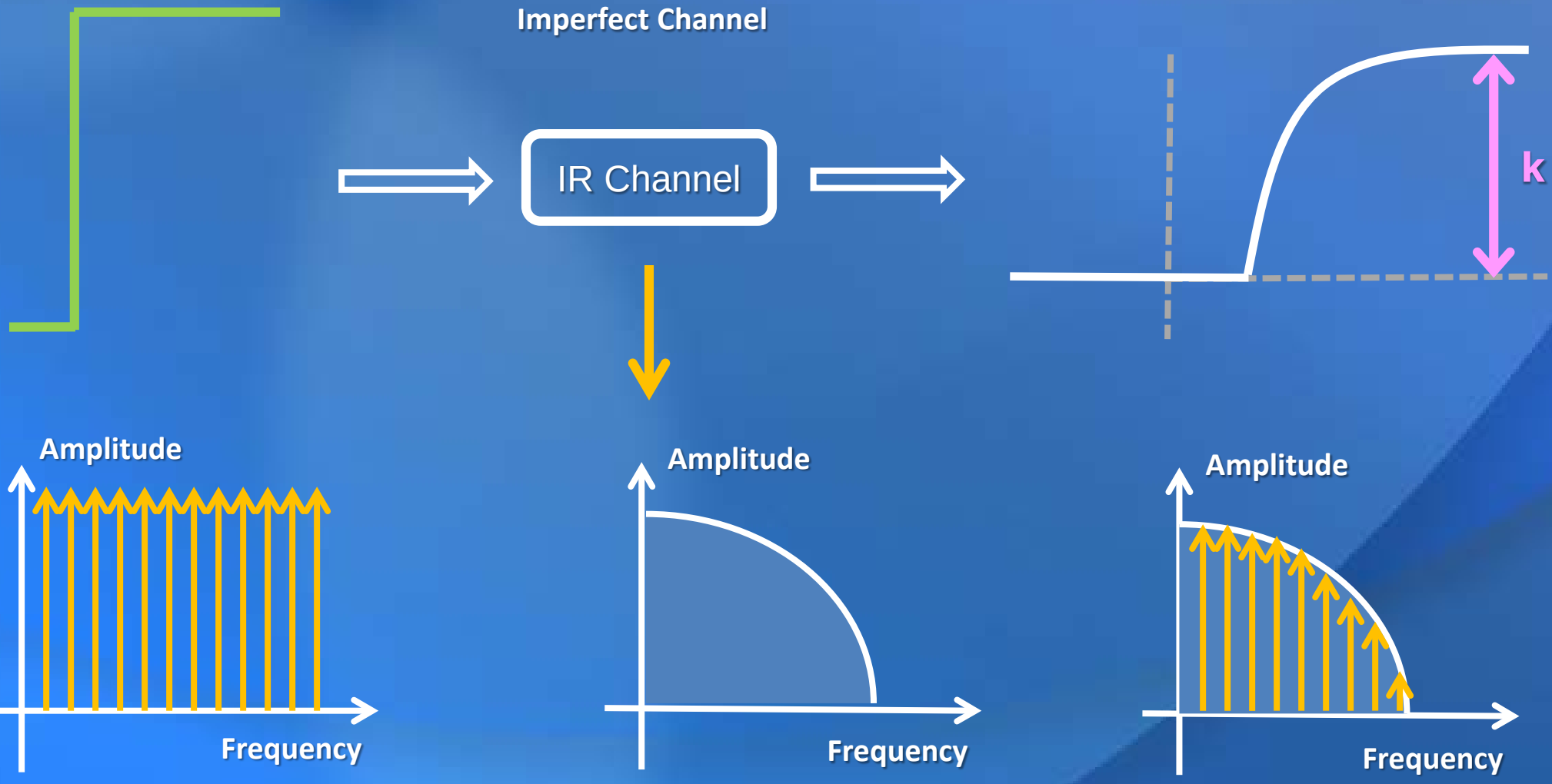
Mathematical Model: $y(n) = c + k(1 - a^{n+1-d})\, u(n-d)$

Frequency Response

Perfect Channel

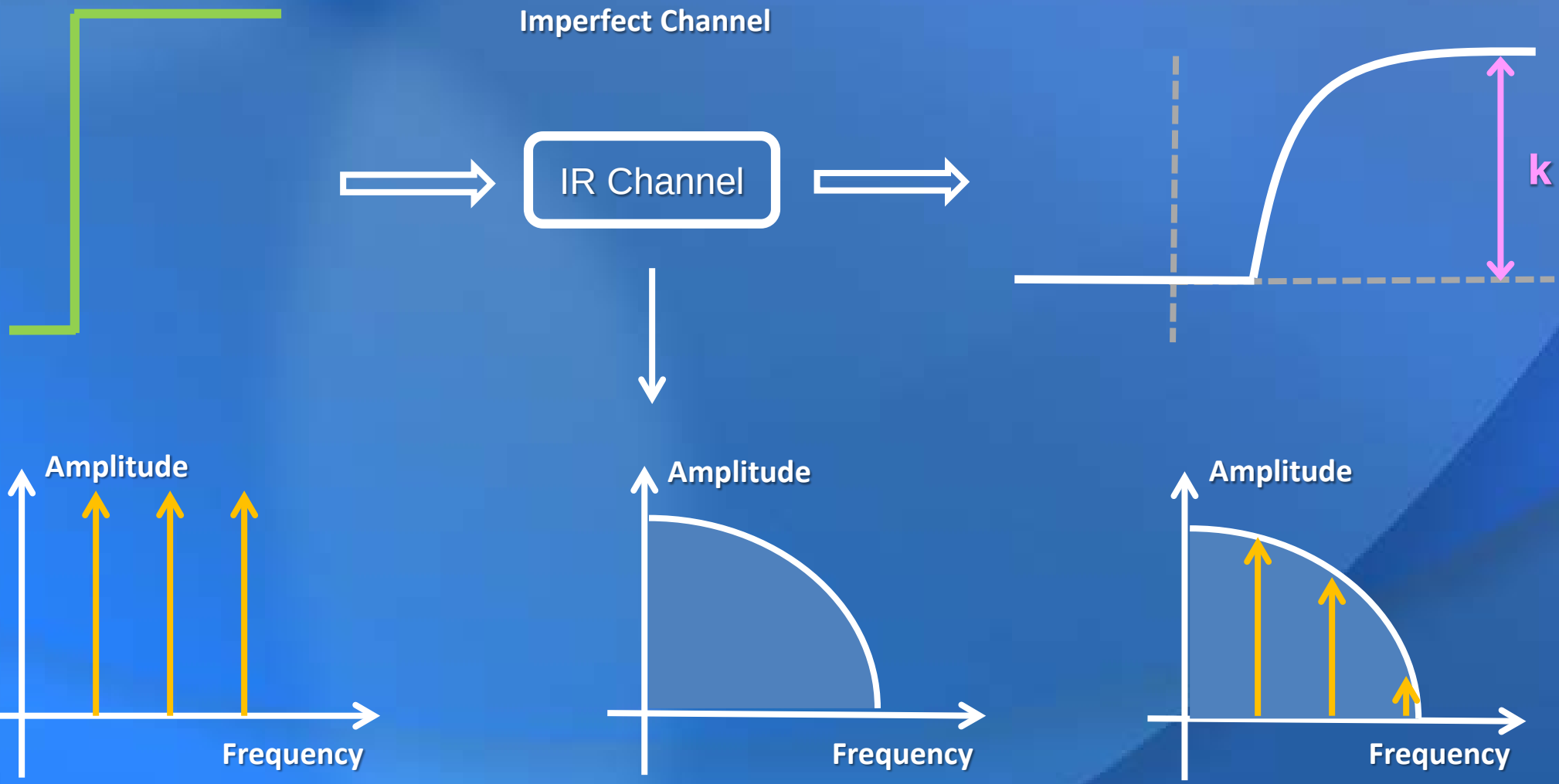


Frequency Response

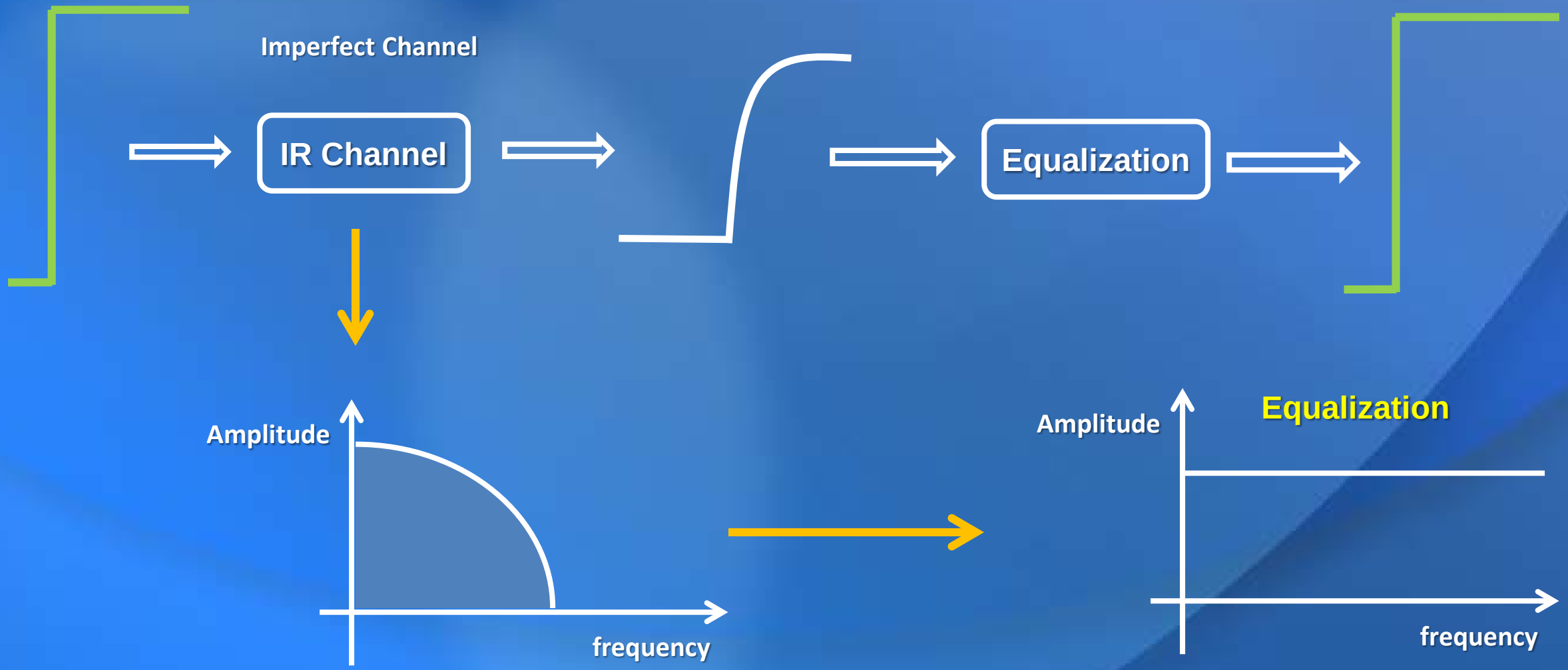


Matlab Program

Frequency Response



Equalization in Time & Frequency Domains



Matlab Program

Equalization in Time & Frequency Domains