

Machine Learning for Networks

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Chapter 1

Wifi-networks

The power transmission of a router is defined with the following formula:

$$Pt(dBm) = 10 \log_{10}(Pt[mW]) \quad (1.1)$$

Regarding the distance at which the power is lost:

$$Pl = L1m + 10y(f, environment) \log_{10}(d) \quad (1.2)$$

Where $L1m$ is defined as the *Path-loss* at 1 meter (usually $\in [20, 25]$)

1.1 Signal to noise ratio

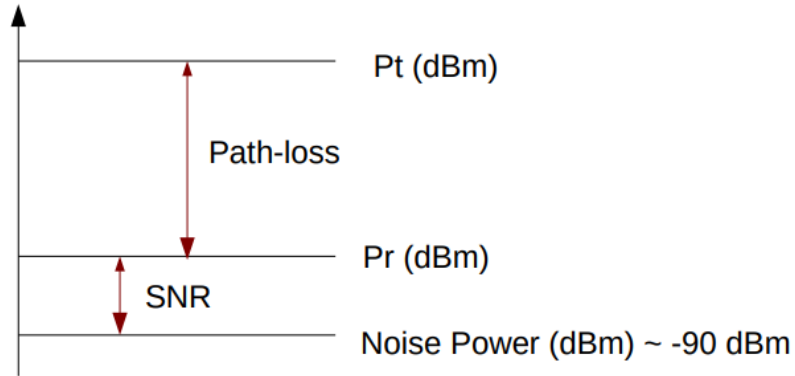


Figure 1.1: SNR

Defined as:

$$SNR[dB] = Pr[dBm] - \text{Noise Power}[dBm] \quad (1.3)$$