Notes on MIMO

Spatial correlation: correlation between the received average signal gain and the angle of arrival of a signal. Rich multipath environments decrease the spatial correlation since the MPCs are received from many different spatial directions. Short antenna separations increase the spatial correlation as adjacent antennas will receive similar signal components.

Kronecker model:

To generate MIMO spatial correlated channel. One needs that spatial correlations at TX and at RX are independent and separable .

Quand on parle de MIMO: parler de la diversité. Petite étude sur la diversité est nécessaire. Cfr Proakis. L’impact de la diversité sur la capacité. Et aussi, nous on rajoute full diversité grâce à la dimension fréquentielle.

Check le cas où tout est décorrélé (spatialement et frequentiellement) 🡪 Is it possible to ensure > 0 SR even if no noise @E and N\_e 🡪 infty , depending on Eve’s communication parameters knowledge / on the precoding scheme ? If no, not interesting to study the correlation… If yes, impact of the correlation?