



# Limits On Wireless Communication In Fading Environment Using Multiple Antennas

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# Outline

- Introduction.
- Mathematical model.
- Capacity formulas.
- Lower bound on capacity.
- Capacity improvement.
- Comparison of various systems.
- Min-Max strategy.
- Summary.

# Introduction

- We make the following assumptions
  - Receiver knows channel characteristics but not transmitter.
  - I.e: fast feedback link required otherwise.
  - We allow changes to propagation environment to be slow in time scale compared to burst rate.
  - Model used is Rayleigh fading.
  - Use information theory to find out increase in bit/cycle compared to no of antennas used.