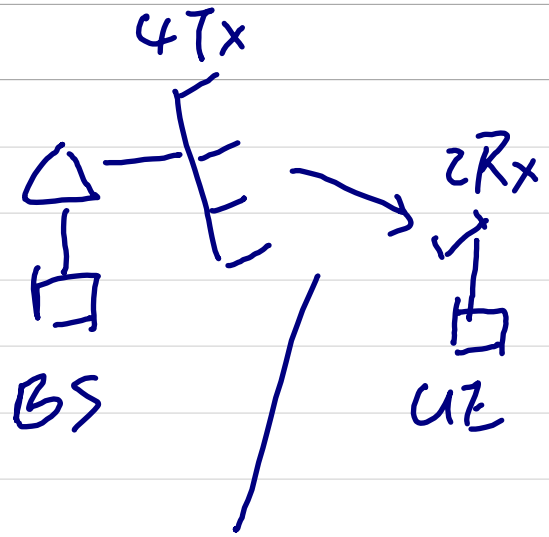



Rx signal = desired signal + interf + noise

$$SINR = \frac{P_{Rx}}{N + P_{interf}}$$

path loss
shadowing
Rayleigh flat fading

channel

$$\underbrace{H_{k,q,i}}_{\text{channel inst. } k,\ \text{user } q,\ \text{BS } i} = \underbrace{\tilde{H}_{k,q,i}}_{\text{i.i.d.}} \underbrace{\bar{\bar{R}}_{t,q,i}}_{\text{cor. matrix}}$$


$$\tilde{H}_{k,q,i} = \xi \tilde{H}_{k-1,q,i} + \sqrt{1-\xi^2}\, N_{k,q,i}$$

$\xi = 1$ constant
$\xi = 0$ no memory


↑ ↑ ↑ ↑ Tx select one user to serve

each user calculates: ① PMI → precoding matrix to use

② RI → 1 or 2 streams

Tx → Rx.. 1 transmit only 1 symbol

2. transmit 2 symbols (based on SNR)

MMSE RX.

$(HH^H$ + interf + noise)

1. system model

$$\underline{Y} = H\underline{X} + \underline{n}$$

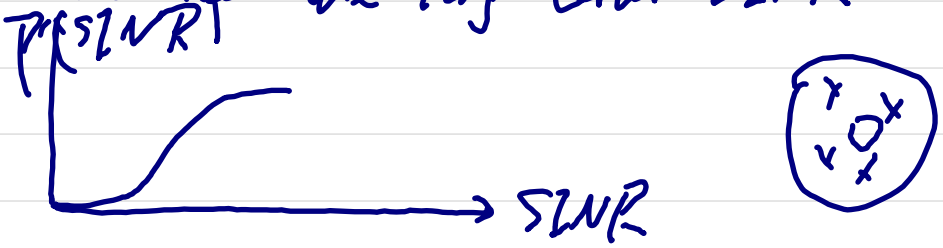
MMSE Rx

$$T = (HH^{-1} + \underbrace{H_i H_i^{-1} + \delta_n^2 I}_{\text{noise+interf}})^{-1}$$

achivable rate

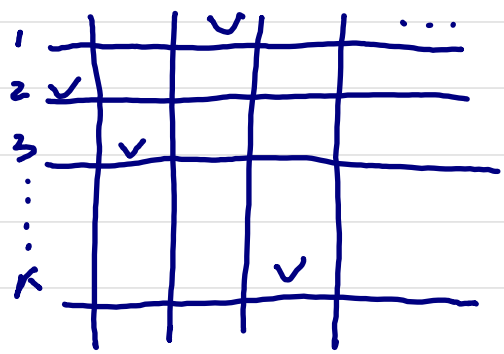
$$C = \log_2(1+SINR_1) + \log_2(1+SINR_2)$$

2. calculate the long-term SINR






3. PF scheduling over T very large number of slots.




Rate: 1 0 0 R 0 ...

$t_c$ large: max rate

$t_c$ small: round robin

i. discuss the CDF of each user based on $t_c$

ii. influence of the number of users