

**Performance Analysis of  
Cooperative Multi cell Pre coding  
With Global CSI and Local  
Individual CSI in the Large  
Dimensional Regime**

# ABSTRACT

- Using theoretical results from large random matrix theory, we derive large dimensional approximations of signal-to-interference-plus-noise ratio for both precoding cases.
- Such approximations depend only on the slow fading channel statistics instead of the fast fading channel realizations. It is easy to quantify the performance loss caused by local individual CSI in the large dimensional regime.
- Two different massive MIMO scenarios are considered.

# EXISTING SYSTEM

- Channel state information is critical for the performance of cooperative multi cell transmission.
- In this paper, the performances of cooperative multi cell pre coding under global CSI and local individual CSI are analyzed and compared in the large dimensional regime.
- To meet the required performance, lots of new technologies have been proposed for the promotion of the fifth generation mobile communication networks.
- Massive multiple input multiple output large scale MIMO is a recently proposed technology.

# PROPOSED SYSTEM

- When the number of antennas and that of users go large at the same rate, there is a constant gap between the two CSI cases.
- When the number of antennas goes large, while the number of users is fixed, the performances of both CSI cases are the same.
- This means that the impact of limited local individual CSI vanishes.
- Numerical results validate the theoretical analysis and show that there is constant performance loss due to the price of limited CSI.

# HARDWARE REQUIREMENTS

- Processor - Intel core i3
- RAM - 2B
- Hard Disk - 20 GB

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# SOFTWARE REQUIREMENTS

- Operating System : LINUX
- Tool : Network Simulator-2
- Front End : OTCL (Object Oriented Tool Command Language)

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# REFERENCE

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