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High Fast & High Precision 5g Network

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Abstract: *we have design pilot scheduling method to reduce the effect of pilot contamination in multi-user multicell massive MIMO systems, we proposed a low-complexity near-optional algorithm developed from the cross- entropy optimization(CEO)frame network. the pilot contamination problem can be alleviated if the UTs in neighbouring cells with strong mutual interference are assigned to different pilots. however, such pilot scheduling problem is a permutation-based combinatorial optimization problem that is non-convex, but also achieves excellent performance with low complexity.*
Index Term- *cross-entropy optimization, interference, massive MIMO, pilot contamination, pilot scheduling*

I. Introduction

The massive quality machine type user equipments it support 5G.the large access of delay will make new random process. this method is done by n0n-orthoganal pilot scheduling it perform multiple delay .In non orthogonal time and perfume different user operation. collision of user equipment has been reduced. the base station perform multiple signal interface and has been perform by preamble detection. our analysis shows that the performance of non-orthogonal conventional of pilot scheduling simulation result analysis the non orthogonal can support user equipments.

II. Fifth Generation Networks

5G support thousand users in future. the non orthogonal perform uplink to connect and implement in base station. when larger user perform the random access procedure is inefficient due to large collision ,this cause network congestion and delay ,this also take large power consumption. the random access it works as bottleneck of 5G networks .In long term evaluation the performance of random access has four message handshake ,it perform between user equipment and eNodeB. The 3 layer message and contention resolution. A period sequence of time, frequency will be resource that is called as random access slots which is already trigger the random access then it perform transmission continuously by using random access. The total available preambles 64 in individual cell. if more random access slot perform then collision will occur, then is collision is inevitable. the selection of user preambles information has been received and then it transmit the message physical uplink shared channels .some of channel perform collision if it use same preamble, these problem mostly occurs in 3GPP,then when the user has collision continuously and that message will be transmitted to the preamble transmission. If many number of user perform in same frequency and time then congestion occurs and collision will also increase this make random access failure. if minimum number of user perform with minimum number of preamble transmission the access delay will be occurred . if it performs then block of frequency will be performing and this create utilized network resource . In modern 5G 1 networks two base stations are used to perform cellular networks ,that is mobile station requires random access channel for transmission and then for initial networks. four separation way transmission will be perform where two message shared over transmission resource and another message transmitted and exchange in logical channel mobile telecommunication successful transmission of data exchange random access channel messages. Machine communication merged a new communication and supported automatic operation system with or without interaction of humans minimal

III. Preamble Transmission

In performance of transmission every user perform broadcast channel transmissions using physical broadcast channel the user information has frequency offset ,root sequence index, each information perform number of preamble transmission, contention resolution, power back off offset and window size performed. preamble transmission is performed when the use starts the transmission first the information will goes to preamble base station and then it will transmitted to the respective slots the identification technique is performed by random access preamble transmission.

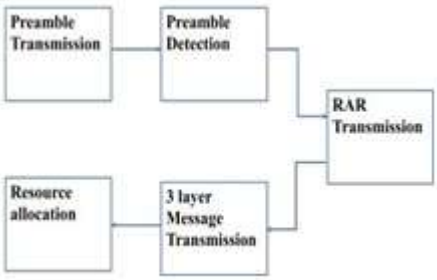

Fig 1.1 preamble transmission

The signal is obtained from base station and then it transmitted the preamble information ,the original information and preamble are added and then transmitted into preamble detection ,the detection will detect the original and transmitted information from the base station. Then resource access reservation perform an operation ,it allocate place for the user and then store the information and then it has been transmitted into 3 layer ,the information has been separated in three different layer of message and signal transmission of operation ,individual signal of transmission has been perform and then correlation has been performed and noise and delay has been reduce and then allocation of resource has been performed.

IV. Ue Power Back-Off

The signal is get from the base station and then constant received power has been performed ,the uplink power transmission is given by

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the down link block estimate the transmission of signal from the base station ,the transmitted power has been increased due to fractional power control.LTE advance is given 1GBPSin downlink and 500 MBPS data uplink ,the long term evaluation has been new technologies such as carrier aggregation .

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user allocation based on current data rate ,this perform maximum throughput, so it receive minimum resource or null resource using this method. propotional fairness.

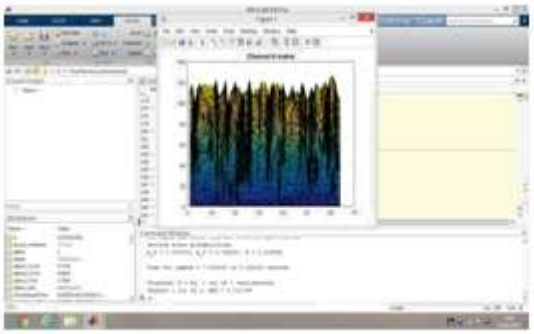

fig 1.2. H channel

fig 1.2 shows the user information has been added into pilot and merge of signal operation has been perform, different and multiple users are been perform .

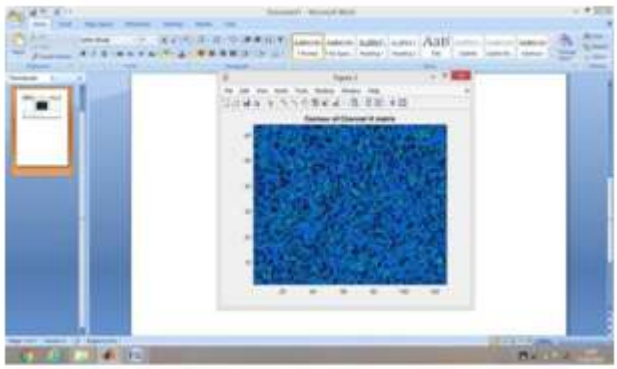

Fig 1.3 Contour of channel H matrix

fig 1.3 shows The density vlaues has been calculated ,my showing three different colors we can identify the different number of users ...the low colour identify less density ,the dark colour identify high density values.

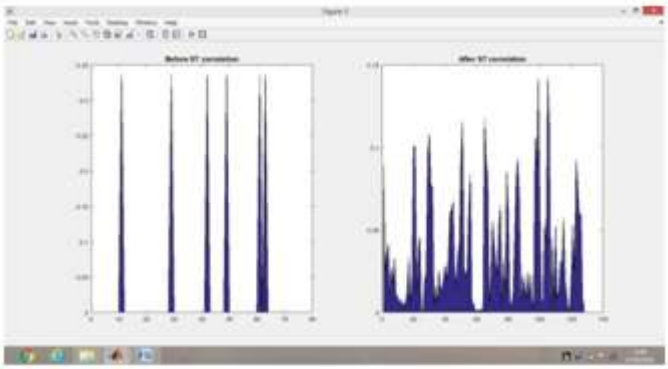

Fig.1.4 correlation

fig 1.4 shows when the information pass it is missed with correlation and after scheduling the original information is obtainned.

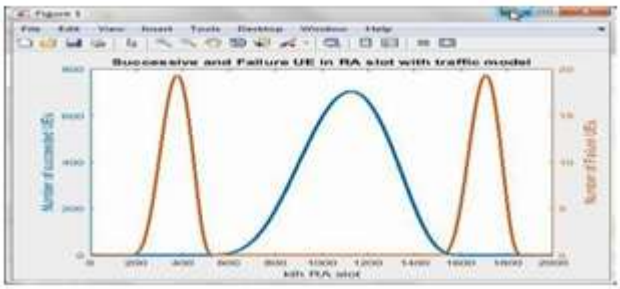

Fig 1.4 successive and failure UE

display the Figure.1.4 It successive and failure UE and RA slot with traffic model then resource allocation .The slot is perform in RA.

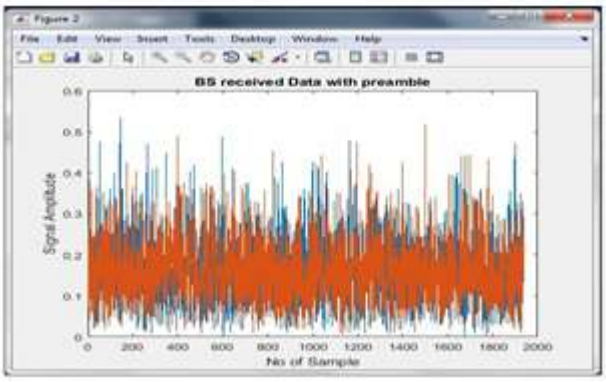

Fig 1.5 BS Received data with preamble

Figure.1.5 It consist of a 2 set of user difference of received data with preamble from the base station .number of base stations and user equipments are created for charge of distributing available resources among active users in order to satisfy their QoS needs

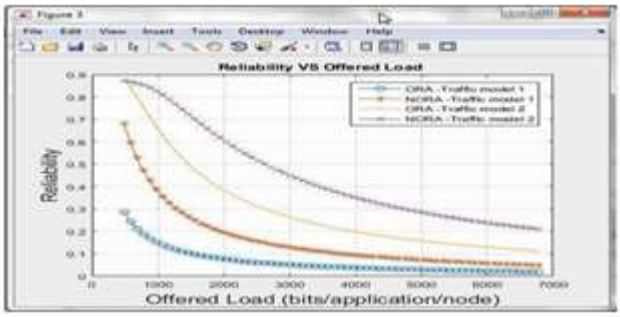

Fig.1.6 Reliability VS offered load

Figure .1.6 It shows the traffic mode difference for ORA and NORA .The traffic will be more in ORA and traffic mode will low in the NORA.

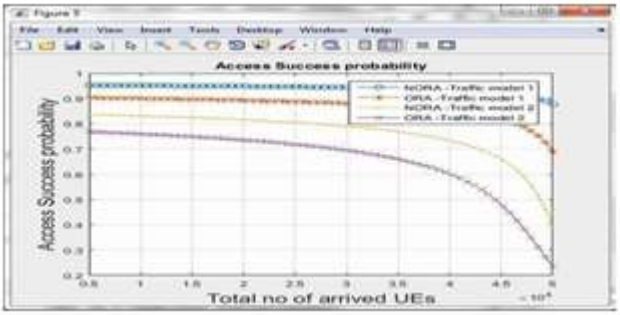

Fig.1.7 Access success probability

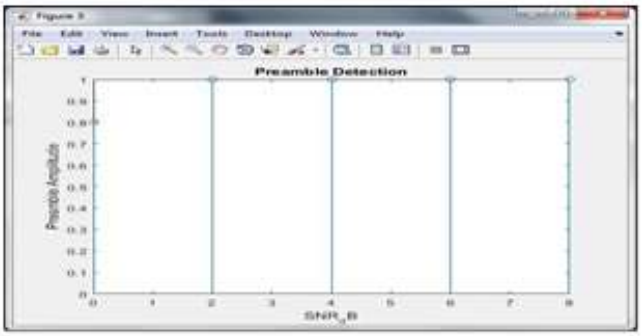

Figure.1.8 It shows that The base station first extracts the relevant PRACH signals within

specific time/frequency resources through time-domain sampling and frequency-tone extraction. Each cyclic shift defines a Zero Correlation Zone (ZCZ) detection zone for corresponding preamble. The preamble detection process consists of searching the PDP peaks above a detection threshold within each ZCZ.

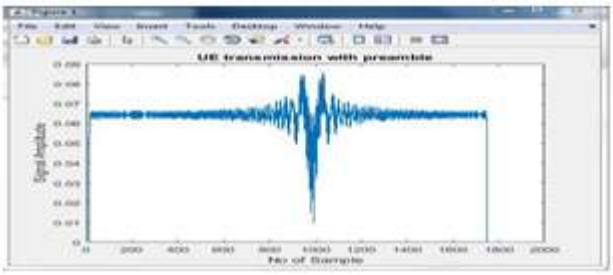

Fig1.9 UE Transmission with preamble

V. Conclusion

We have proposed the NORA scheme to alleviate the potential access congestion problem regarding the massive-connection scenarios in 5G networks. Specifically, the spatial distribution characteristics of UEs were utilized to realize multi-preamble detection and RAR reception, which effectively improves the preamble transmission success probability. Moreover, NORA allows simultaneous message transmission of multiple UEs, thus alleviates the demand on limited PUSCH resources. In addition, we have presented the analytical model to investigate the transient behaviour of the NORA process with non-stationary arrivals under realistic assumptions. Besides, a comprehensive evaluation of our proposition is given, including throughput, access success probability, number of preamble transmission and access delay. Simulation results indicate that NORA outperforms ORA in terms of all the considered metrics, especially for a relatively large number of UEs (e.g. 50000 UEs). Compared with ORA, NORA can increase the throughput of the RA process by more than 30%. Moreover, NORA manages to halve the required preamble transmissions and access delay when the total number of UEs is near the RA throughput. The user performance is increases and multiple signal transmission is performed, correlation and delay has been reduced.

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