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| LTE +MIMO Simulation using Matlab |
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LTE +MIMO Simulation using Matlab

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**Abstract:**

-1G, 2G, 3G & towards 4G.

-4G is supported by WiMAX and LTE.

-Why LTE?

-Physical channels in LTE.

-Choosing LTE PUSCH (Physical Uplink Shared Channel) for simulation using MATLAB & C.

**CONCLUSION:**

**Why LTE is required?**

LTE will change the wireless industry as we know it.

LTE’s high speeds and low latency mean that you’ll be able to run virtually any

application designed for wired use on a mobile device. HD video. Real-time video conferencing. Video telephony. Voice over IP (VoIP). Multi-player gaming. Mobile TV.

Bandwidth constraints that have kept many applications tied to landlines will be history.

LTE will also provide unprecedented global coverage and inherent global mobility. And because we’re deploying LTE in the 700 MHz band, with its propagation characteristics and spectrum depth, we’ll have strong in-building penetration. Plus, because of the open

approach we’re taking with LTE development, you’ll be able to access the Internet from any compatible device. And we’re expecting to see a flood of new devices, from netbooks to mobile Internet devices to other home electronics like cameras that haven’t traditionally been online. There’s no telling what might be created to run on the Verizon Wireless network.

LTE focuses on the quality and speed of the data transfer. This is realized by the help of the OFDM modulator/demodulator which is the most used solution to problem such as ISI or fading. One of the key features in OFDM is the IFFT/FFT pair. To speed up the data transfer provides by the OFDM, an improvement of the computation speed of the IFFT/FFT tool can be sought. With the latest multiprocessor platform, the speed up can be improved even more as soon as the data transfer protocol between the different parts of the architecture are well managed.

**One of the BER curves for LTE PUSCH**

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**BER Vs SNR for different modulation scheme with Channel BW=1.4MHz**

 Future work:

**-Choosing another physical LTE channel in uplink as PUCCH(Physical Uplink Control Channel).**

**-Simulation for PDSCH (physical downlink shared channel) with MIMO.**