Suggestions for possible future work

To improve the received signal quality and link performance, there are measures which can be used independently or in tandem. These are equalization, diversity, channel coding. Equalization compensates for inter symbol interference (ISI) created by multipath within time dispersive channels. If the modulation bandwidth exceeds the coherence bandwidth of the radio channel, ISI occurs and modulation pulses are spread in time into adjacent symbols. An equalizer within a receiver compensates for the average range of expected channel amplitude and delay characteristics.

Diversity is another technique used to compensate for fading channel impairments, and is usually implemented by using two or more receiving or transmitting antennas. Base stations may transmit multiple replicas of the signal on spatially separated antennas or frequencies. Channel coding is used by the receiver to detect or correct some of the errors introduced by the channel in a particular sequence of message bits. There are three general types of channel codes: block codes, convolution codes, turbo codes. MIMO systems will need to function reliably in interference limited environment in order to be effective. CDMA systems are designed to operate in an interference free environment and for this reason it is used in modern cellular systems.

Future work should include the simulation of MIMO system with CDMA and to study their effects on bit error rate. The combination of MIMO and CDMA can further improve the system transmission rate over the traditional CDMA system. Multiuser MIMO CDMA systems are considered where each user has multiple transmit antennas, different transmit antennas of the same user use the same spreading code. Matched filter method and de-correlating detector method are used to detect the signals with Gaussian Noise.

Scope for future work:

- We used soft handoff using two base stations for capacity analysis. We can analyze using more than two base stations involved in soft hand to see the effect of bit error rate performance of communication Network.
• In our analysis, we have assumed path loss exponent value of four. The similar analysis can be done by assuming other path loss model like Hata model.

• Work can be extended to analyze the effect of other cell interference.

• Soft handoff algorithm can be implemented after careful selection of parameters.

• Combination of other schemes like channel borrowing during handoff process can be analyzed for QoS parameters.

• Various parameters used in this algorithm can be calculated and loaded into look-up tables to facilitate dynamic threshold allocation.