ABSTRACT

One of 3rd Generation world communication system standards (3G) used *Wideband Code Division Multiple Acces* (WCDMA). WCDMA downlink system is more crucial than its uplink. It's need appropriate receiver design to compensate *Multiple Access Interfertence* (MAI) . MAI is formed by interference of channel frequency allocation.

Equalizer is one method for reducing multipath distortion. In adaptive manner, equalizer change the filter tap in time varyng chanel. *Least Mean Square* (LMS) and *Time Varyng Least Mean Square* (TV-LMS) were used in the latest research. Now, the research continue with equalizer which is use blind equalization algorithm. The difference between conventional adaptive equalizer is : blind algorithm do not use pilot training symbol. In this research, *Constant Modulus Algorithm* (CMA) together with LMS is choosen to be adaptive algorithm. CMA take the constant modulus signal property then minimalized its error. LMS Algorithm takes part in first iteration for converging the tap filter.

The simulation results prove that adaptive equalization in *Wideband* CDMA receiver improve the system performance but do not reach the BER target. The step size parameter, number of tap filters, user velocity are affected the system performance. The higher number of tap filters and step size parameter make the rate of convergence faster. The modified CMA which added pilot signal as reference improves the equalizer performance, but it does not reach the BER target.