ABSTRACT

Multiple access broadband era can accommodate the high level of user mobility. It's led to multi-user diversity, both in time domain and frequency domain. To overcome this problem it needs subcarrier allocation techniques .

At the end of this time, the thesis has been studied about subcarrier allocation using genetic algorithm in dealing with multi-user diversity with the performance parameters of the maximum data rate and fairness. In addition also be studied Algorithm Round Robbin. The Focus things on the uplink SC-FDMA system is that the transmitter power is limited because the device comes from the user and allocation based on consequtively

From the simulation results can be seen that using Genetic algorithms are very reliable to handle user diversity, with a greater number indicated by the user, the greater the maximum data rate, but the value decreased fairness. While using the algorithm Round Robbin maximum data rate but is limited by the larger chunk. Round Robbin algorithm drops drastically, the number of users 64, a decrease of 49.7% fairness. While the pure Genetic algorithm, fairness decrease of 40.2%, and the Genetic algorithm modification, a decrease of 18.5% fairness.But over all, system performation, Round Robbin algorithm still much better than Genetica lgorithm

Keywords : SC-FDMA, Genetic Algorithm, Round Robbin Algorithm, SC-FDMA constraint