

**MINIMIZE THE INTER-CELL INTERFERENCE IN CLOSE
PROXIMITY CELL USING FRACTIONAL FREQUENCY REUSE
METHOD**

MOHD. AZLAN BIN YUSUFF

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Universiti Teknologi MARA (UiTM)

**FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA**

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ABSTRACT

Long Term Evolution (LTE) marketed as fourth generation is a standard for wireless communication of high speed data for mobile phones and data terminals. LTE is based on the GSM/EDGE and UMTS/HSPA network technologies to increase the capacity and speed using a different radio interface together with the core network improvements [6]. The recent increase of mobile data usage and advent of new applications have greatly motivated the 3rd Generation Partnership Project (3GPP) to work on the LTE. Reduce the inter-cell interference is one of the features being proposed for the 4G LTE system. Using the Fractional Frequency Reuse method is a technique that suited to Orthogonal Frequency-Division Multiple Access (OFDMA) based cellular networks where the cells are partitioned into spatial regions with different frequency reuse factors. This thesis focuses on how to reduce the inter-cell interference in close proximity cell using the Fractional Frequency Reuse method. The results compare the difference base station power, distance, capacity, and number of users supported between using Traditional Frequency Reuse and Fractional Frequency Reuse. The graphs of comparison between bit error rate and base station power show that the FFR method can reduce the inter-cell interference.

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