Simulation assignment 1
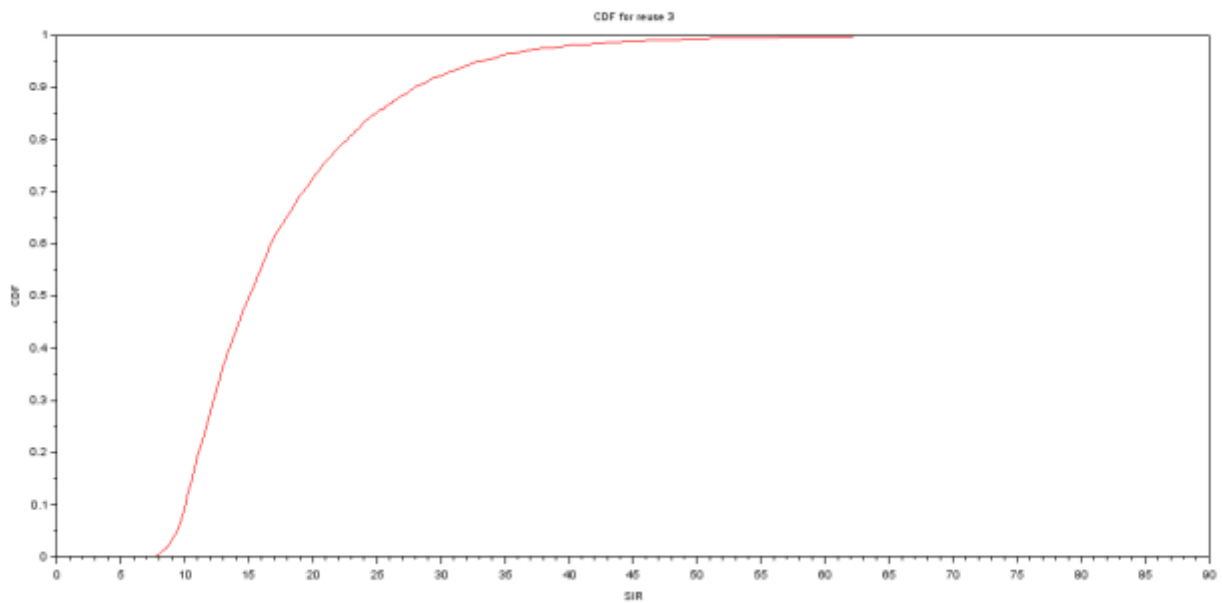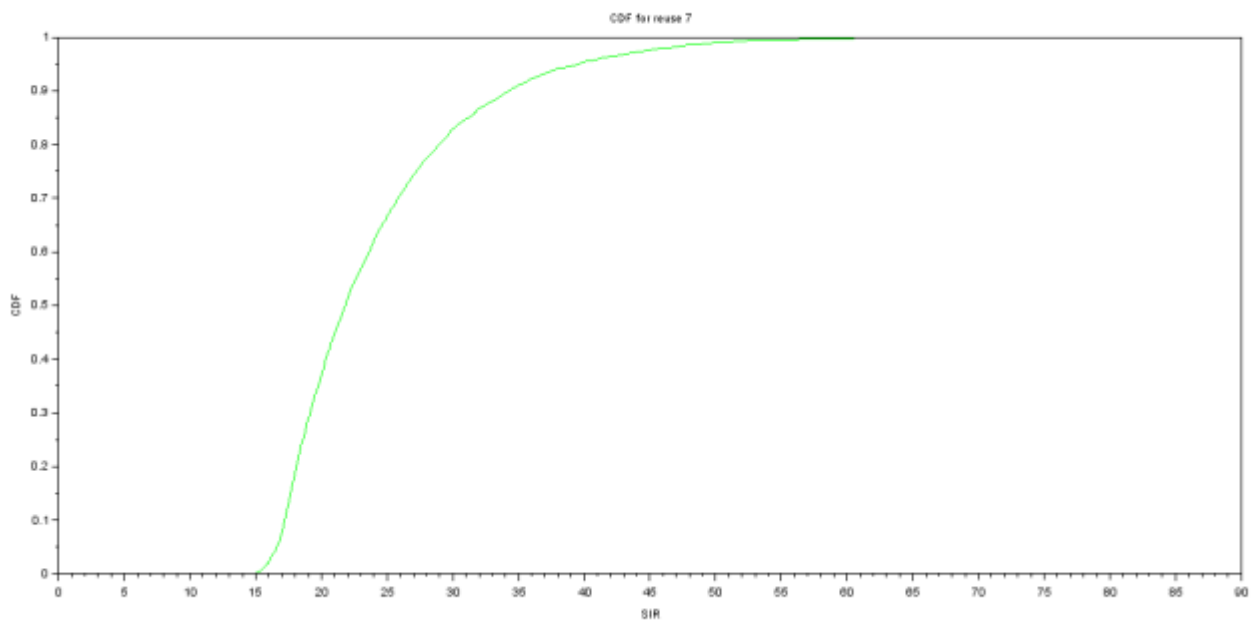
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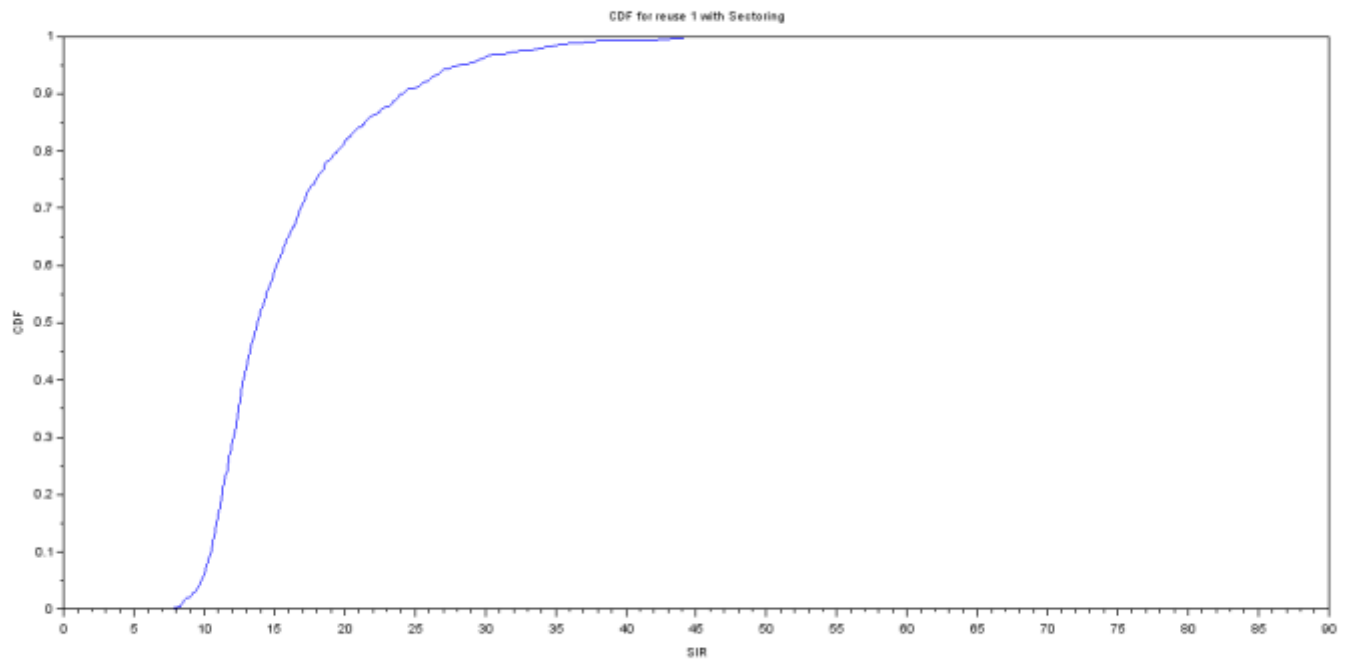
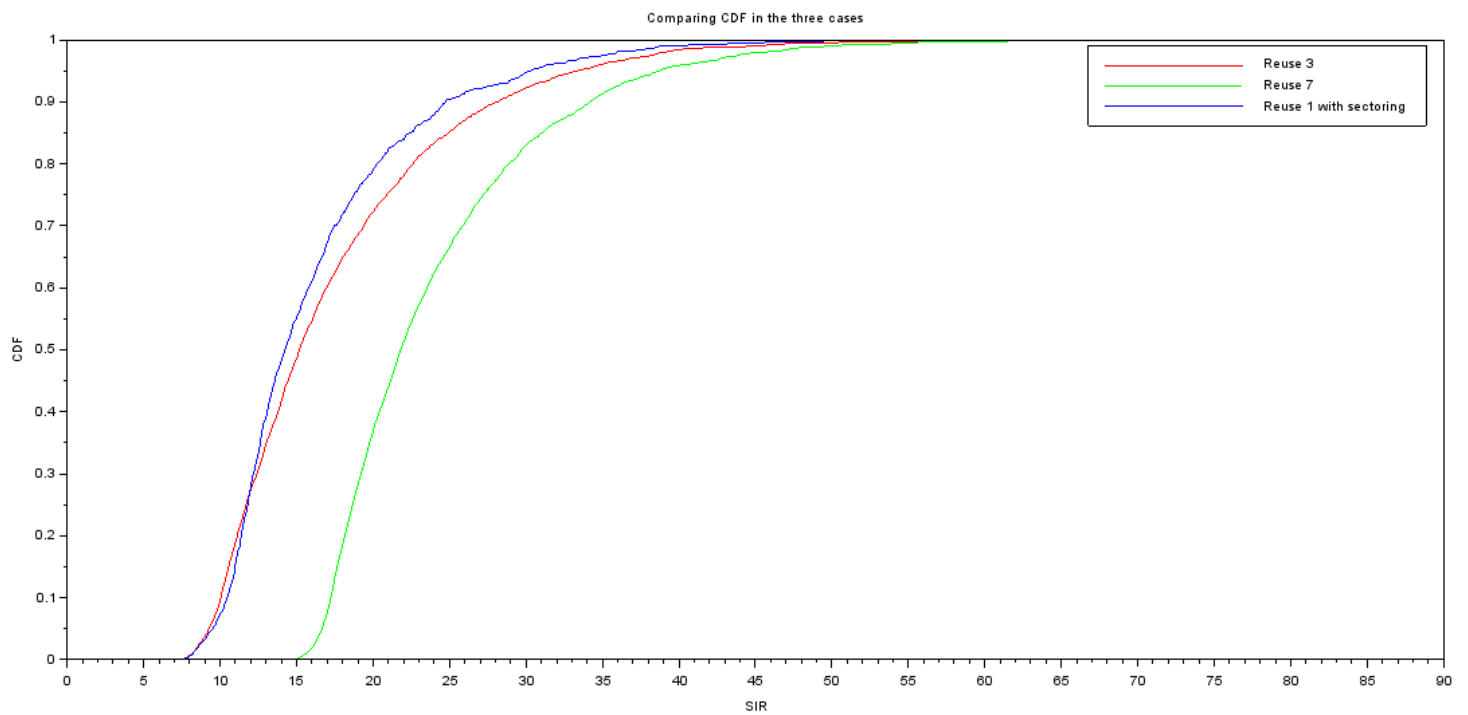**1.** Plot of CDF of SIR in Reuse 3

2. Plot of CDF of SIR in reuse 7

3. Plot of CDF of SIR in reuse 1 with sectoring


Comparing between all the three cases:

Inferences from the comparison plot

1. As seen above, CDF saturates to 1 (which indicates that SIR in sectoring is lowest) fastest in the sectoring case, which is due to the increased interferences in reuse 1 as the interfering cells are closer.

2. The SIR of reuse 7 is much better than reuse 3 as expected as the distances of the interfering cells are more in reuse 7.

3. SIR of sectoring case is marginally better than reuse 3 in the lower SIR regions but the situation changes as SIR increases which shows the effect of a non-linear SIR function

4. Plot of blocking probability vs no. of frequency channels

Plot of blocking probability and no. of frequency channels

Blocking Probability vs No. of frequency channels
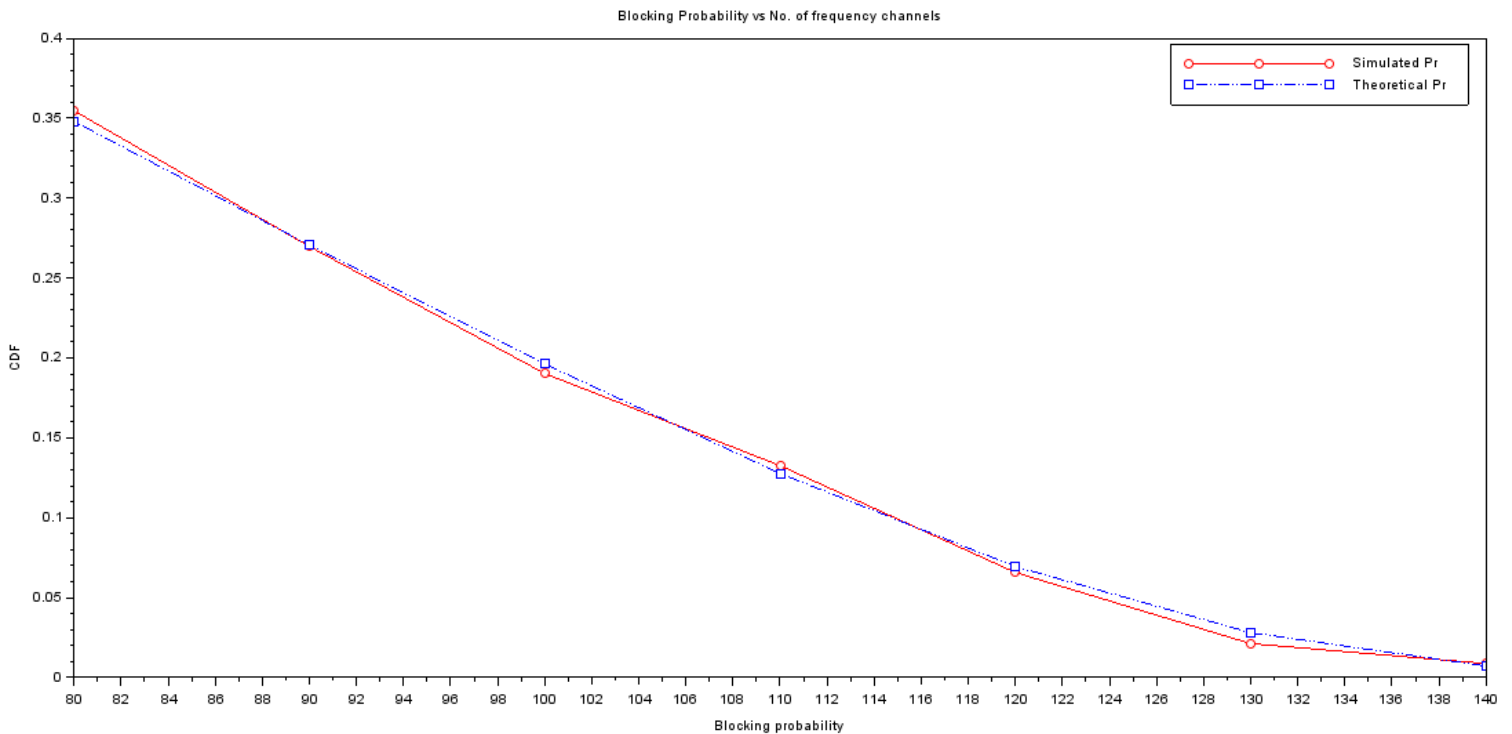
Inferences:

1. The simulated values are close to theoretical values calculated using erlang B formula. As large no. of users are considered during simulation, the steady state assumption of erlang B formula is valid and we get values close to it.

2. With increase in the no. of frequency channels, there is a decrease in the blocking probability which is as expected.