Analysation plan for BLER target

Abstract:

In the LTE system there is a BLER target for the data that is sent. This means that the data that is sending shall have an error rate at a specific level. This is called BLER target or target BLER. This way you can increase your modulation and coding scheme (mcs) until you have you BLER. The definition for Bler is #retransmission/#transmission. So there is a tradeoff between BLER and MCS, the higher MCS you have the higher BLER (mor retransmissions), and the lower BLER the lower retransmissions. What we are analyzing is the throughput for different BLER targets and which BLER target gives the highest throughput.

Questions:

The question this analysis plan to answer is

* Which BLER target gives the highest throughput
* How much is the the throughput increasing/decreasing for different BLER target? Could it perhaps be better to have a different BLER target depending on the channel condition and channel models.
* Is there a difference in thoughput with different BLER target over different SINR-values?
* In different channel models the SINR will vary in different way. Are there any difference in throughput between the bler target and an

We also want to look at different channel models, is the the bler target at 10% still optimal

Simulations:

What we did was. We set a target BLER at a certatain level. We change the SINR in a precoded way in time. We run a trace and look at what is the throughput over time, what is the total number of acknowledged packets. Then we switch the bler target and to the same simulation again.

The bler target value we have chosen is 1% 5% 7% 9% 10% 11% 13% 15% and 20%.

The output of the simulations are shown below

(bild på throughput över tiden)

(bild på throuhput över SINR)

(bild på något annat möjligtvis)

Simulation results:

(here we analyse the output of the simulation)