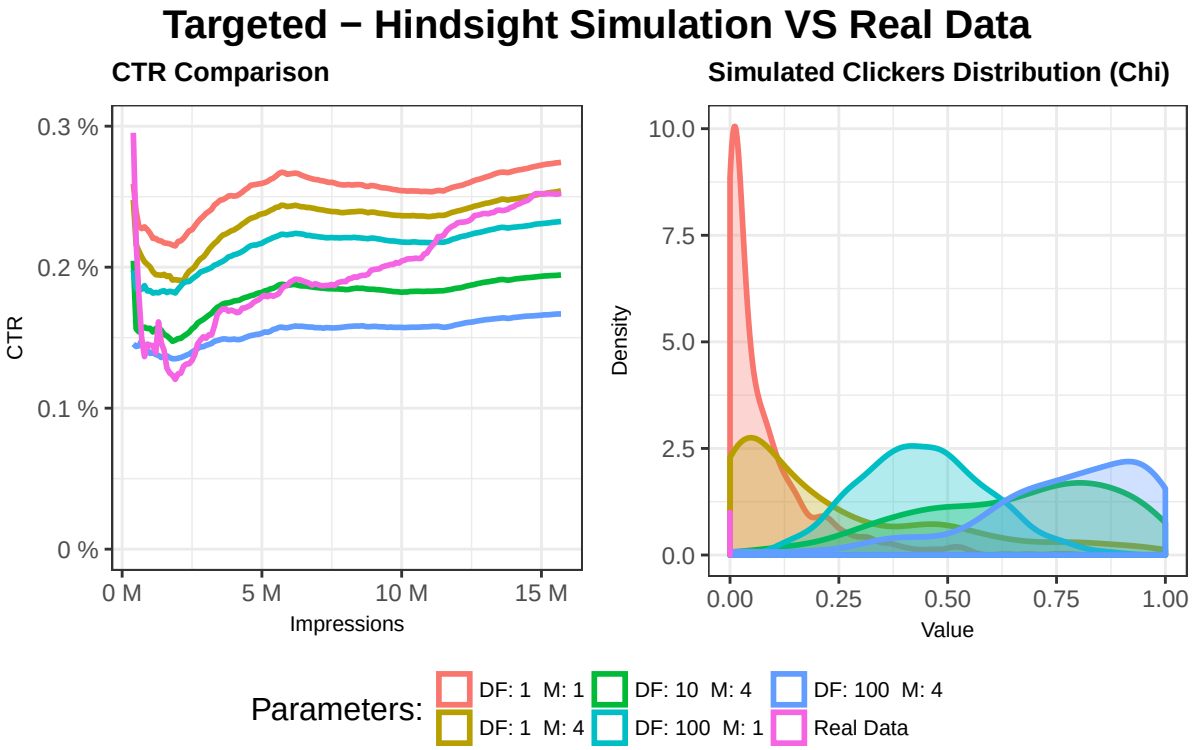
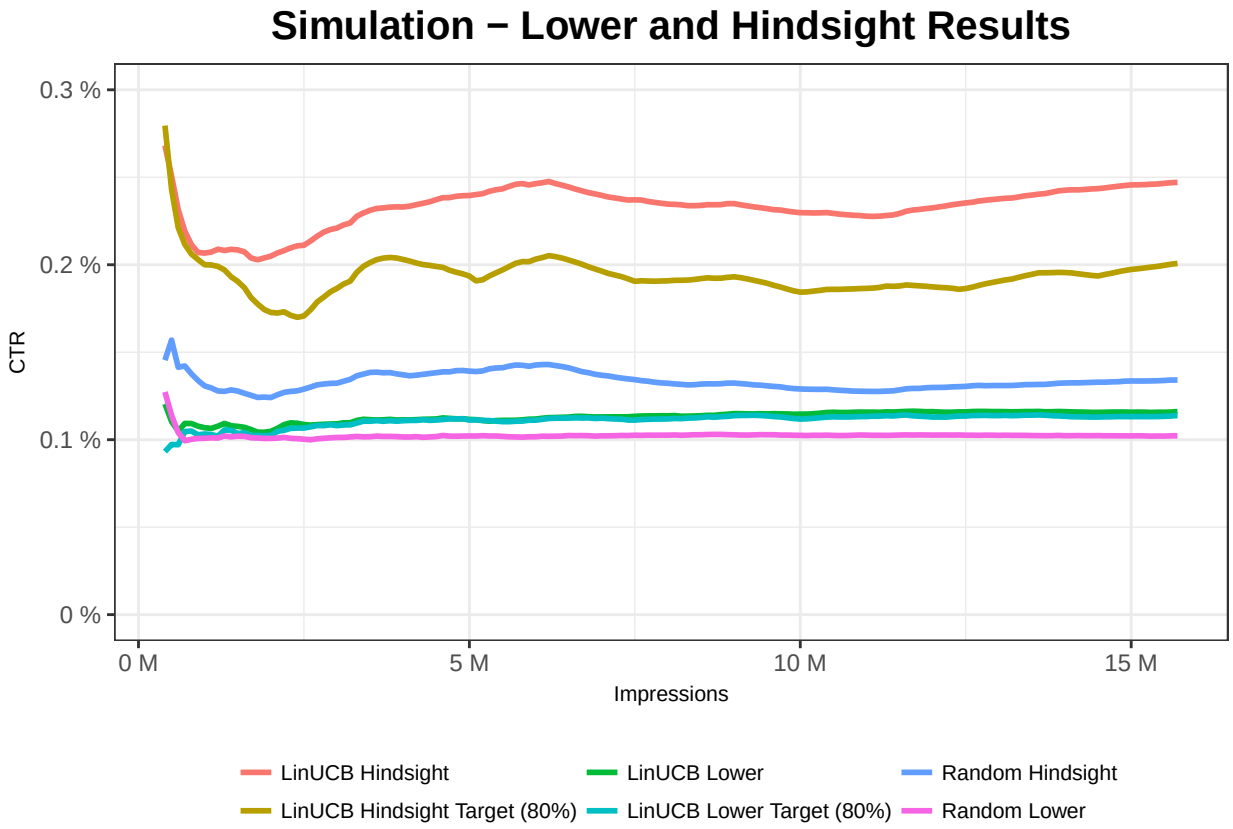
Target Multi-Campaign Simulation Analysis

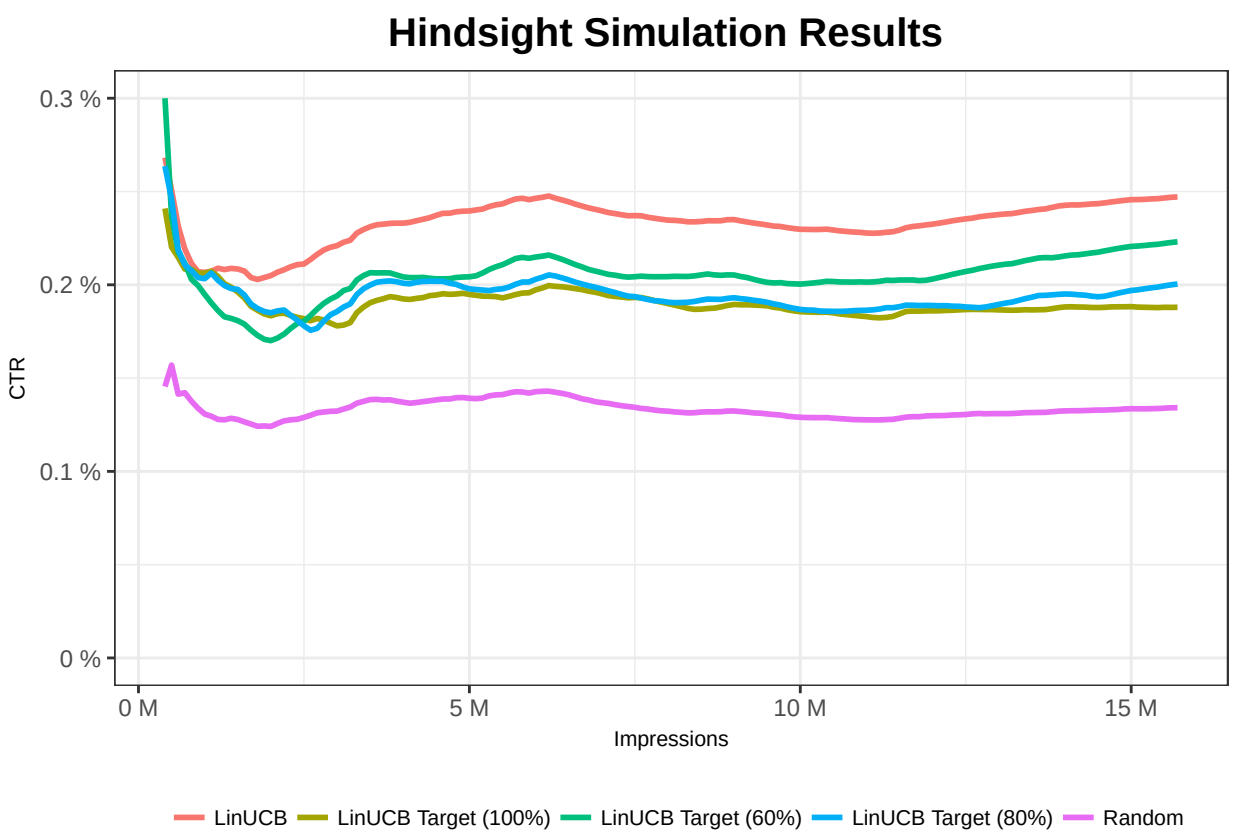
Comparison between real data and simulated data with added clickers. The clickers have behavior based altered by chi distribution with parametrised degrees of freedom and multiplication factor. Final formula for an user click/no click is: $ Normal(prediction, stdev) + multiplier * Chi(df) * CTR + Uniform(-0.1, 0.1) * CTR $

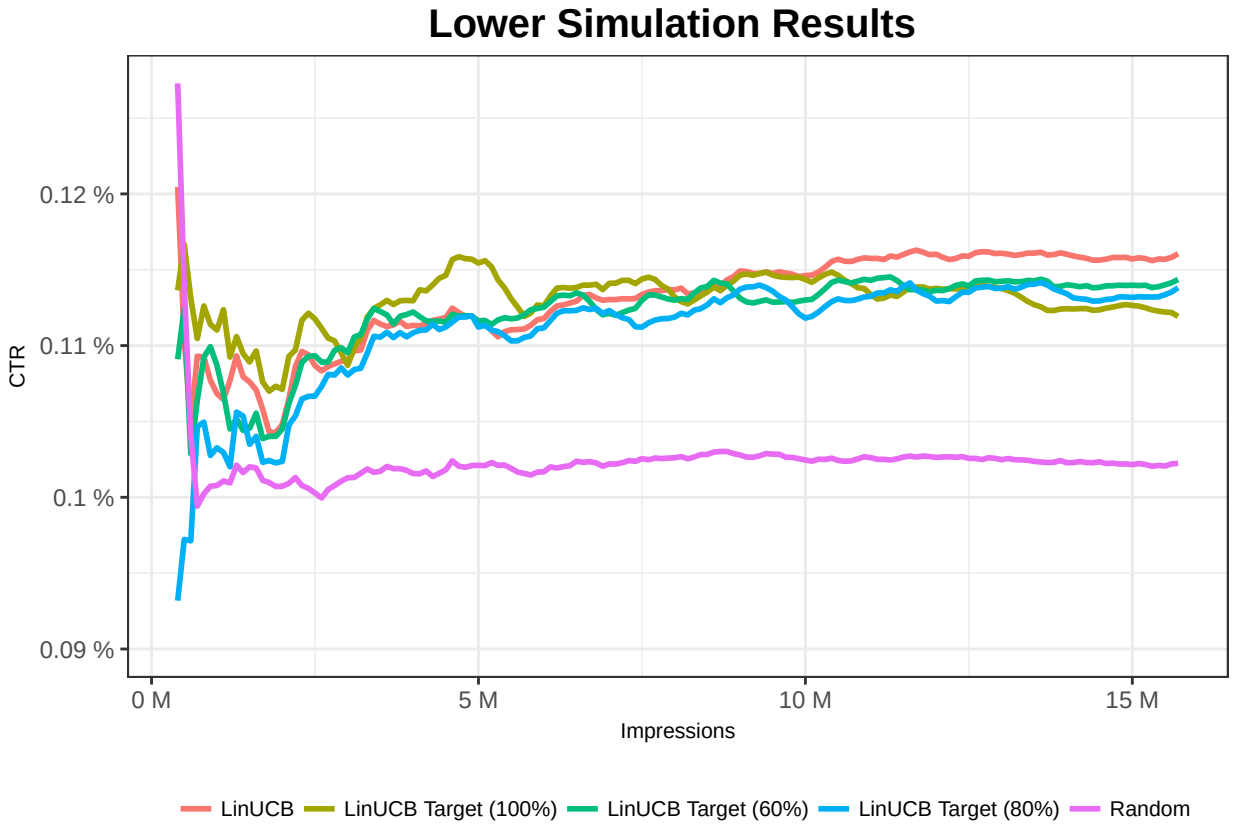



```
## TableGrob (3 x 1) "arrange": 3 grobs
##   z     cells    name                grob
## 1 1 (2-2,1-1) arrange     gtable[arrange]
## 2 2 (3-3,1-1) arrange   gtable[guide-box]
## 3 3 (1-1,1-1) arrange text[GRID.text.194]
```

Comparison between Real data, Simulated Hindsight without added clickers and Simulated Lower bound without added clickers. For Hindsight click is determined using - $Normal(prediction, stdev) + Uniform(-0.1, 0.1) * CTR$ For Lower simulation click either real data click is used or one is generated based on the CTR of the campaign which is chosen.


Simulation − Lower and Hindsight Results
0.3 %
0.2 %
0.1 %
0 %
CTR
0 M
5 M
10 M
15 M
Impressions
LinUCB Hindsight
LinUCB Lower
Random Hindsight
LinUCB Hindsight Target (80%)
LinUCB Lower Target (80%)
Random Lower


Hindsight Simulation Results
0.3 %
0.2 %
0.1 %
0 %
CTR
0 M
5 M
10 M
15 M
Impressions
LinUCB
LinUCB Target (100%)
LinUCB Target (60%)
LinUCB Target (80%)
Random


Lower Simulation Results
0.12 %
0.11 %
0.1 %
0.09 %
CTR
0 M
5 M
10 M
15 M
Impressions
LinUCB
LinUCB Target (100%)
LinUCB Target (60%)
LinUCB Target (80%)
Random