This document shows the figures of 66/22 kV transformer utilization level, Distribution transformer maximum utilization level, Utilisation level for 22kV cables, and Percentage of customers with voltage issues when the number of simulation changes from 10 to 30, 100, and 200. PV inverter control is not active here. The **Num\_Run =10** is set as the default value because we do not want to make the beginner confused. When the Num\_Run increase, the simulation time will increase a lot. For **Num\_Run =200**, this program will run nearly 200 minutes when the PV inverter control is not active. If this control is active, the whole simulation time will be much longer.

As we can see from Figure 1 to Figure 15, as the number of simulation increases, the data distribution, and medium number changes. 200 times simulation has similar results with 100 times simulation. The 10 times and 30 times simulation are not enough to be a representative result. **The data set is not big enough, therefore the outlier cannot be got rid of.** The times of simulation is a key factor for the Monte Carlo simulation. You need consider it carefully before you draw a conclusion.

##### 66/22 kV transformer utilization level

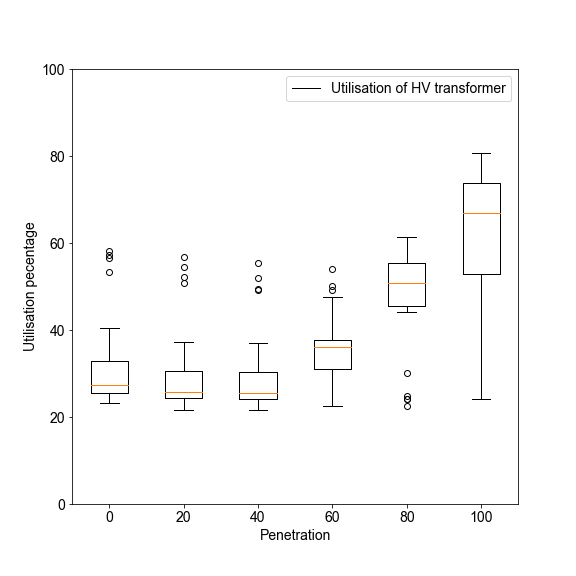
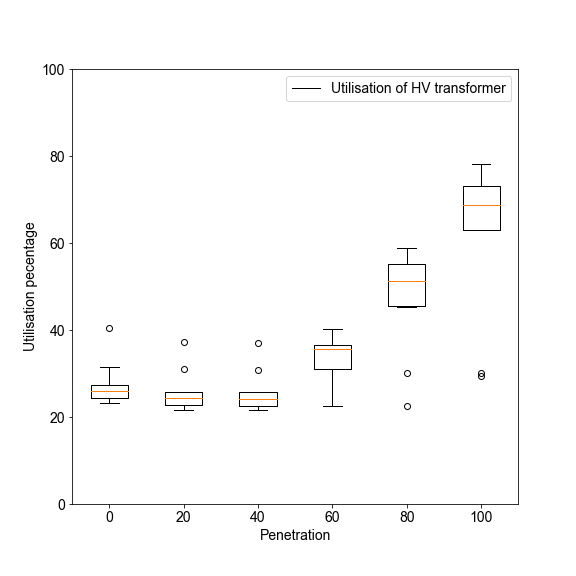


Figure 1 10 times simulation (HV transformer) Figure 2 30 times simulation (HV transformer)

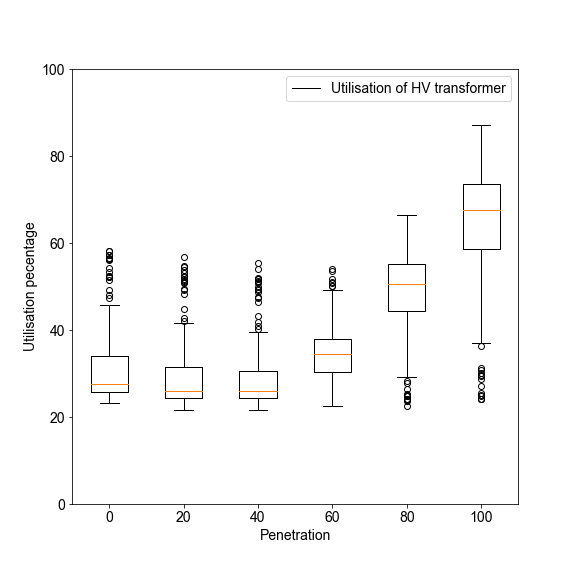
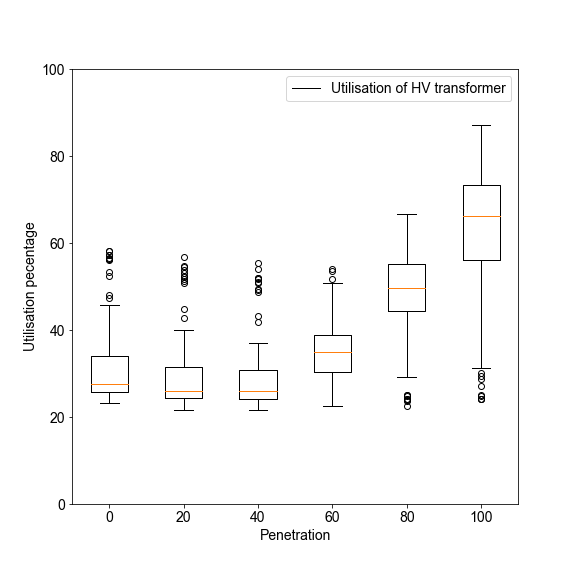


Figure 3 100 times simulation (HV transformer) Figure 4 200 times simulation(HV transformer)

##### Distribution transformer maximum utilization level

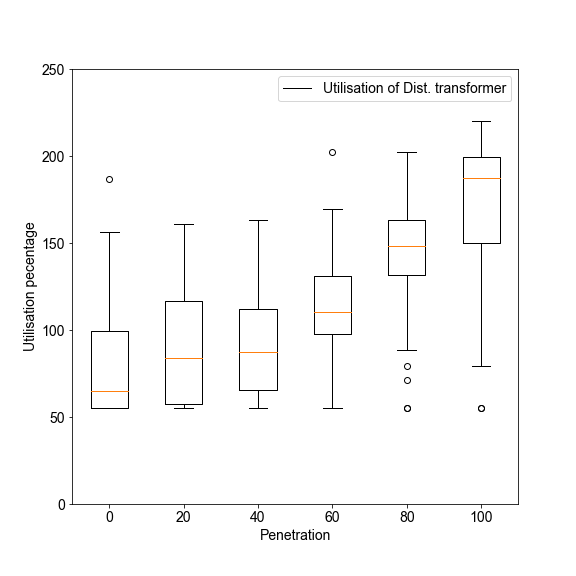
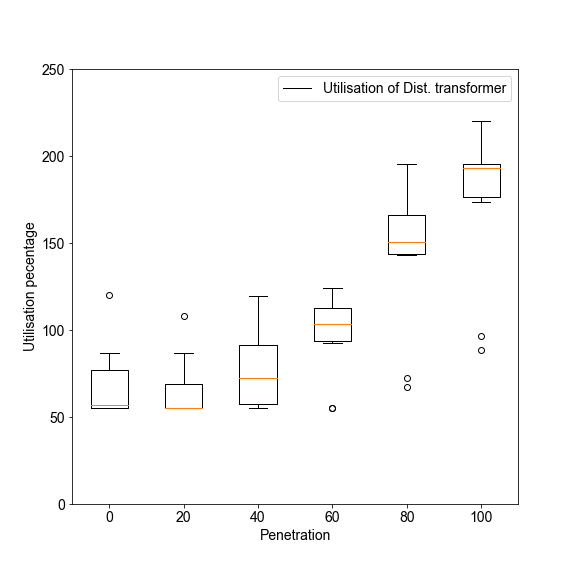


Figure 5 10 times simulation (Dist. transformer) Figure 6 30 times simulation (Dist. transformer)

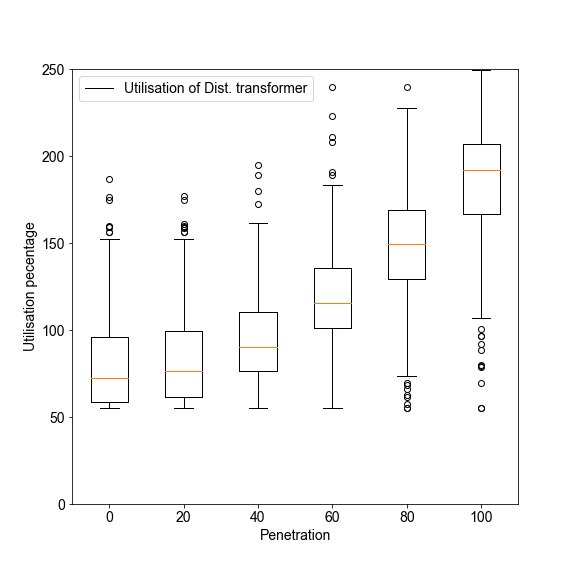
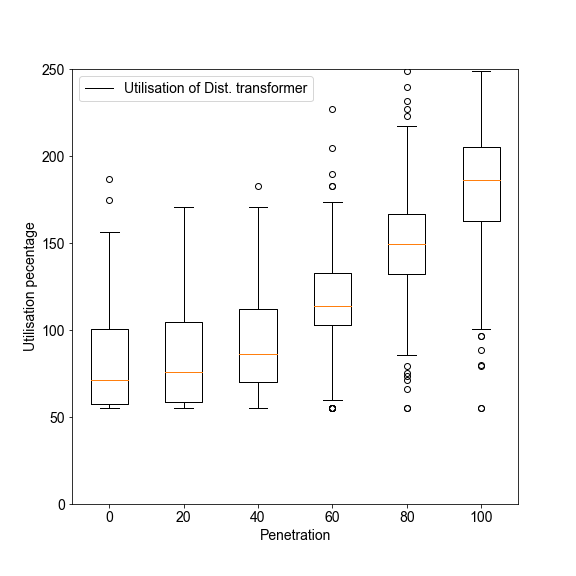


Figure 7 100 times simulation (Dist. transformer) Figure 8 200 times simulation(Dist. transformer)

##### Utilisation level for 22kV cables

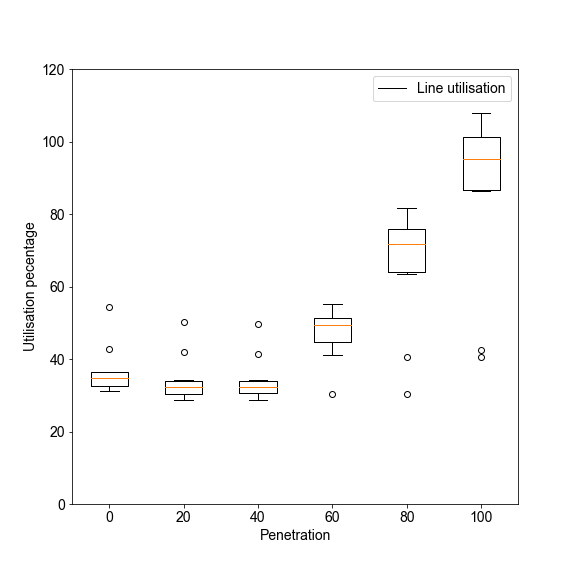
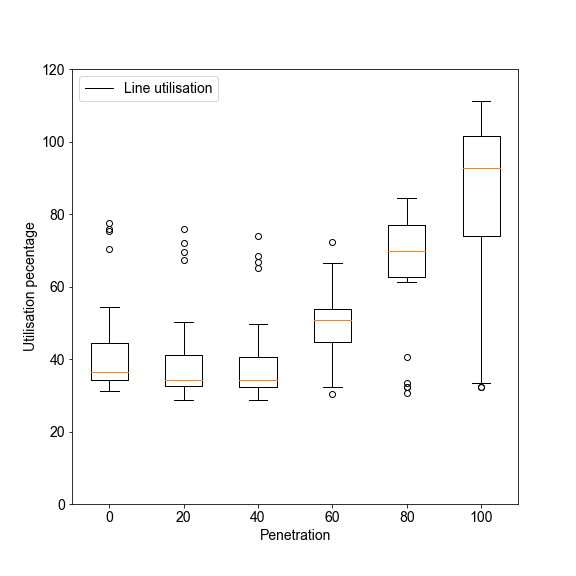
 

Figure 9 10 times simulation (Line utilisation) Figure 10 30 times simulation (Line utilisation)

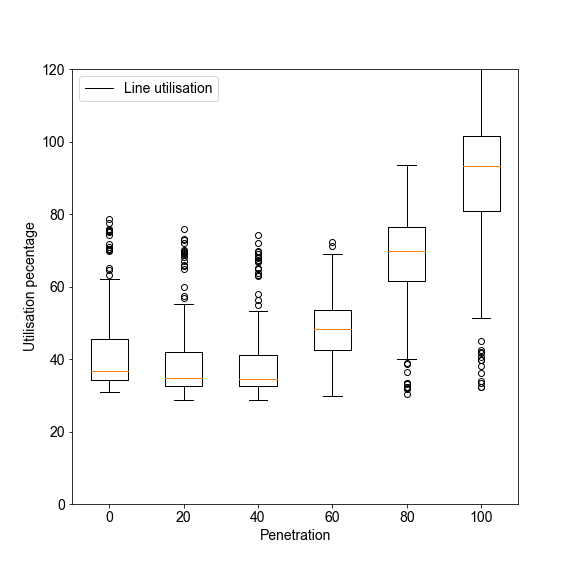
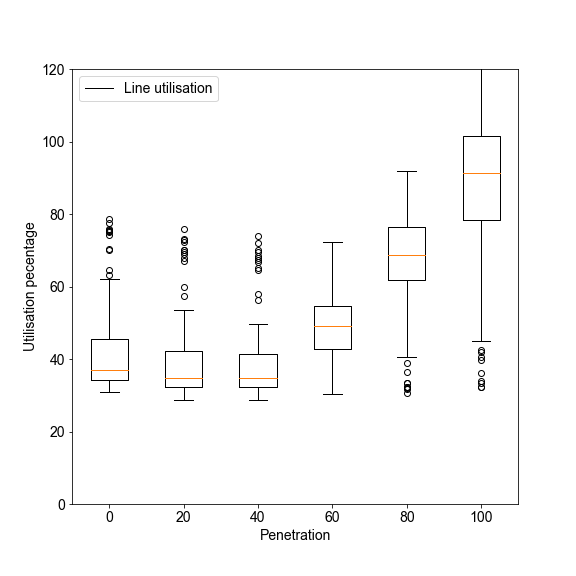


Figure 11 100 times simulation (Line utilisation) Figure 12 200 times simulation(Line utilisation)

##### Percentage of customers with voltage issues

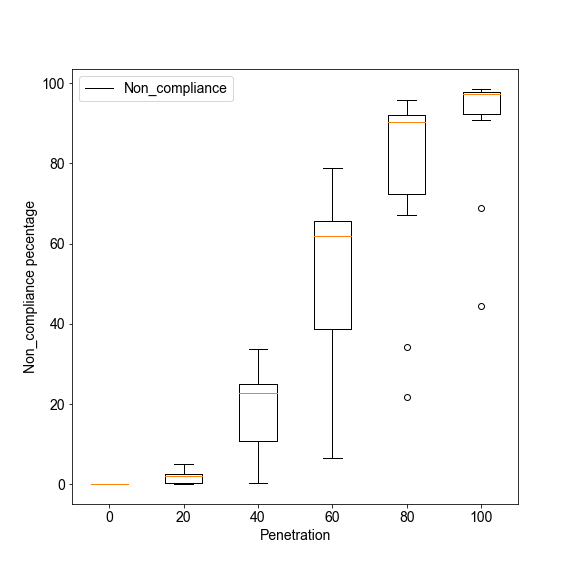
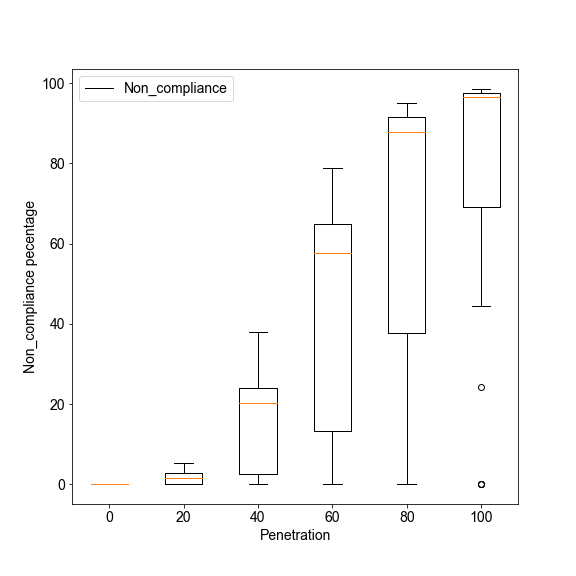
 

Figure 13 100 times simulation (Non\_compile) Figure 14 200 times simulation(Non\_compile)

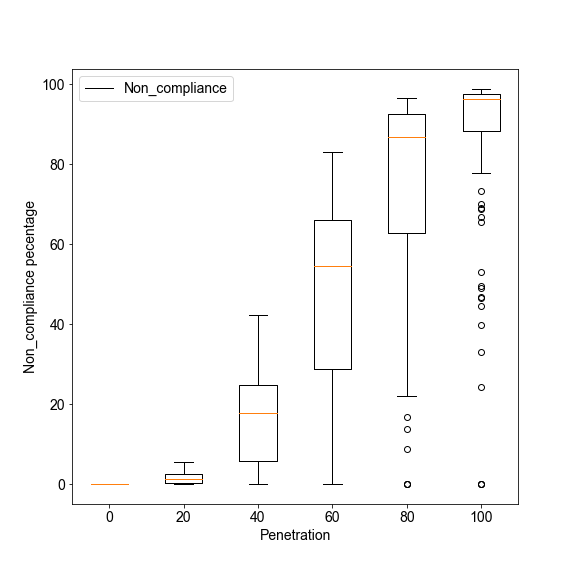
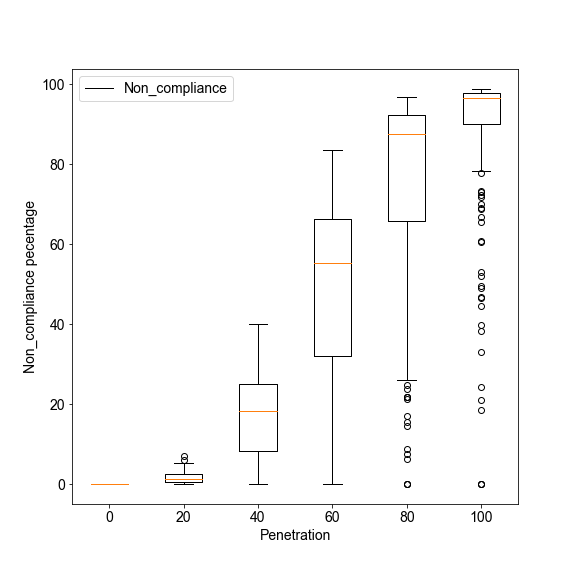
 

Figure 15 100 times simulation (Non\_compile) Figure 16 200 times simulation(Non\_compile)