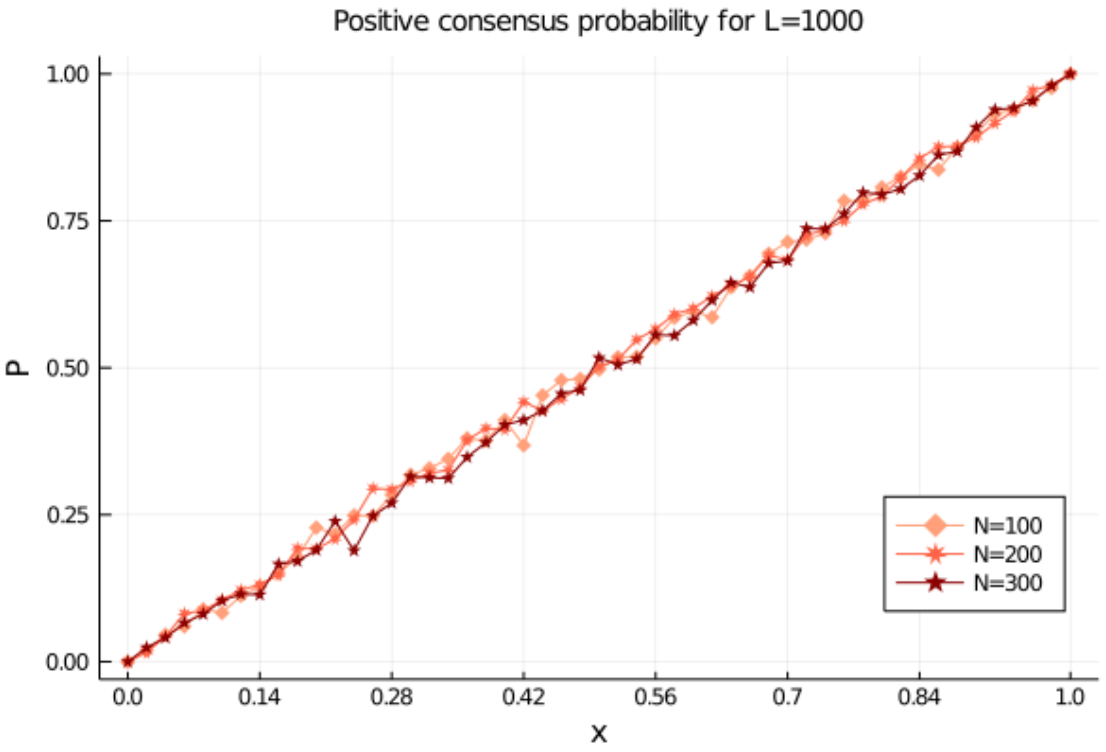
Analysis of q-voter model on the ring

Ada Majchrzak

24 marca 2022

1 Positive consensus probability

Looking at the plot below, we can see that considered probability grows linearly - the bigger the initial positive opinions accumulation, the bigger the probability. Moreover, the plots are very similar for different layout sizes, therefore number of agents is not important in this case.



2 Average time needed to reach consensus

In this case, plots look more quadratic than linear. They are similar to parabola with maximum around point $x = 0.5$ - it seems very logical and natural, as in that point we have equal number of positive and negative opinions, which makes it difficult to reach consensus within the model. Furthermore, number of agents clearly influences shape of the plots - the bigger the layout, the more Monte Carlo steps are needed to reach consensus.