

Presentation 5

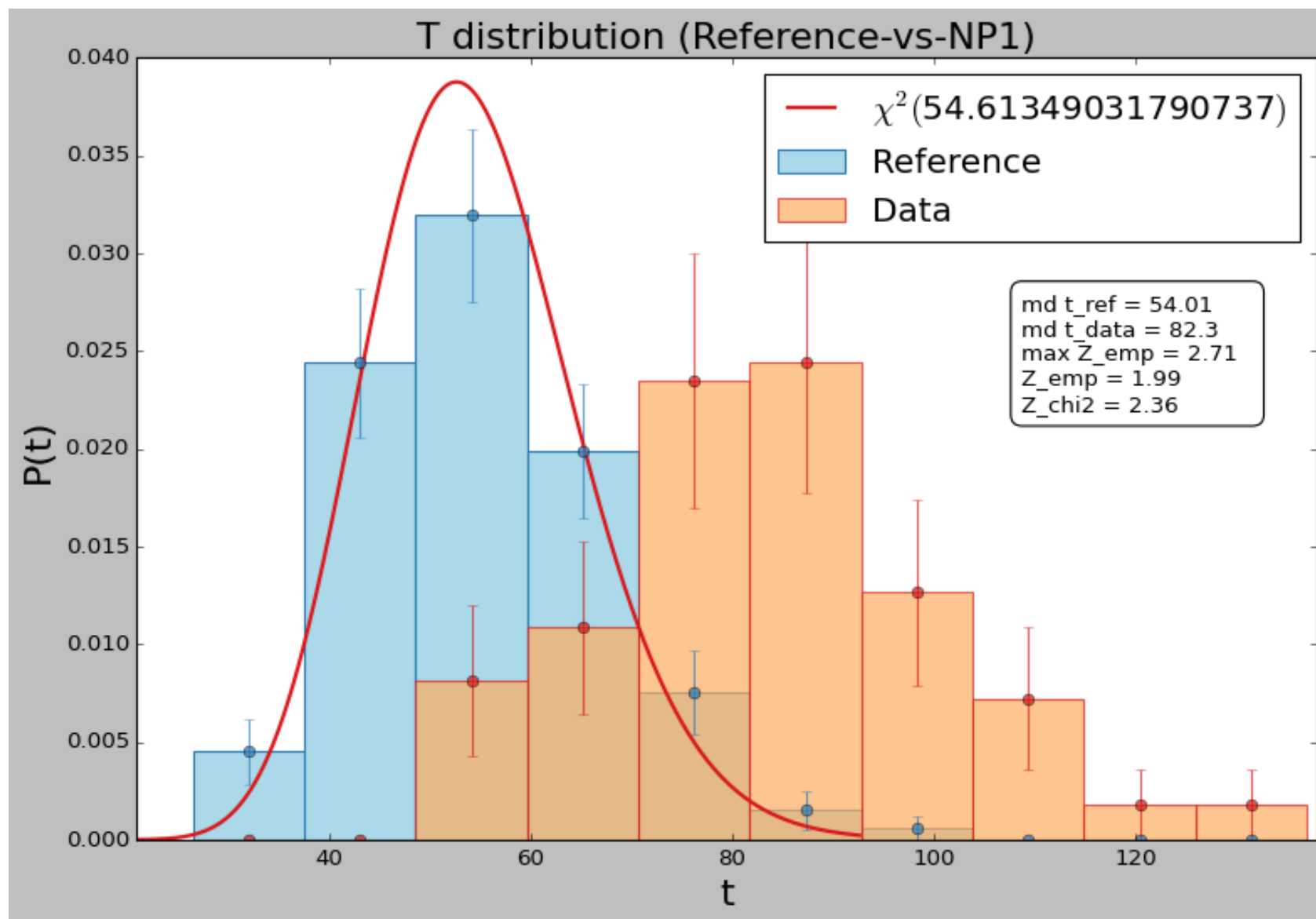
Optimization of parameters (2D)

Overview

1. Compatibility of the t-distribution with the given N_0 , $N0$, M , and Λ .
2. Optimization of parameters of the model (M and Λ)
3. Optimization of parameters of the dataset (N_0 , $N0$, and NS)

Compatibility of t-distribution with the optimum parameters

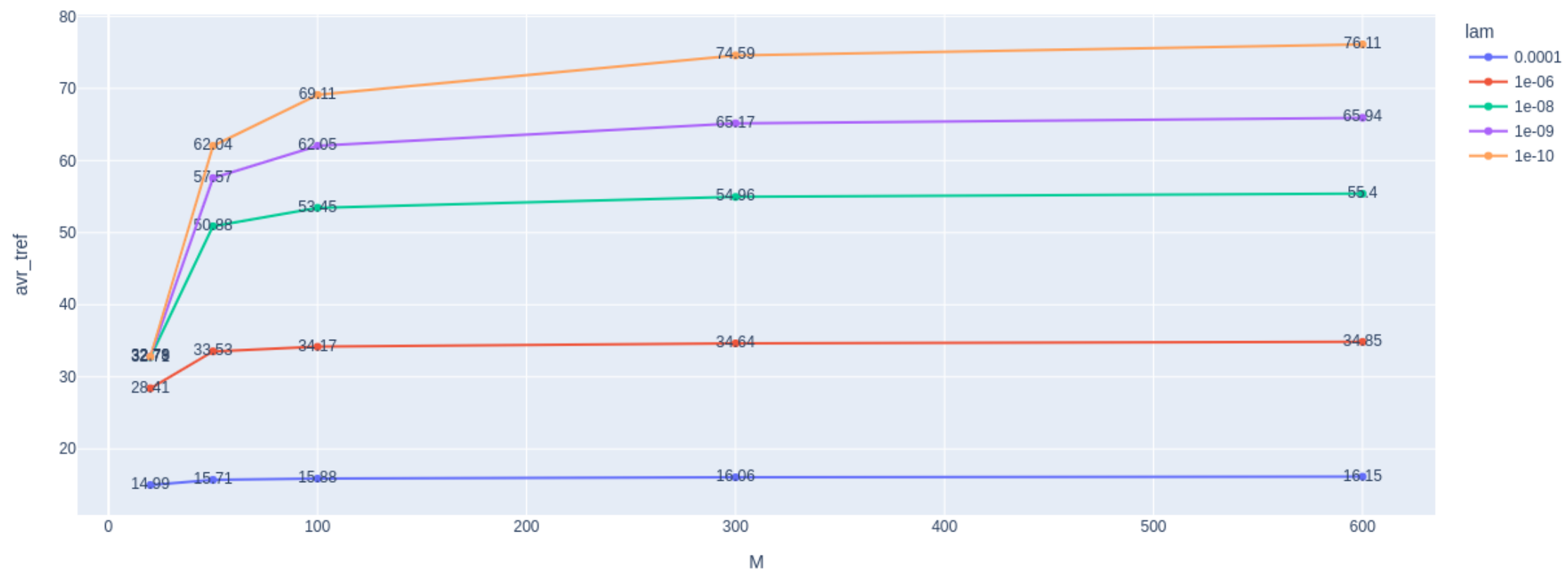
- In last section, in order to be sure on the model and the optimum parameters that were found, I need to check the compatibility of t-distribution of the model.
- Optimum parameters:
 1. Parameters of the model ($M=300$, $\text{Lambda}=1e-8$)
 2. Parameters of dataset ($N_0=1500$, $N0=800$, $NS=13$)



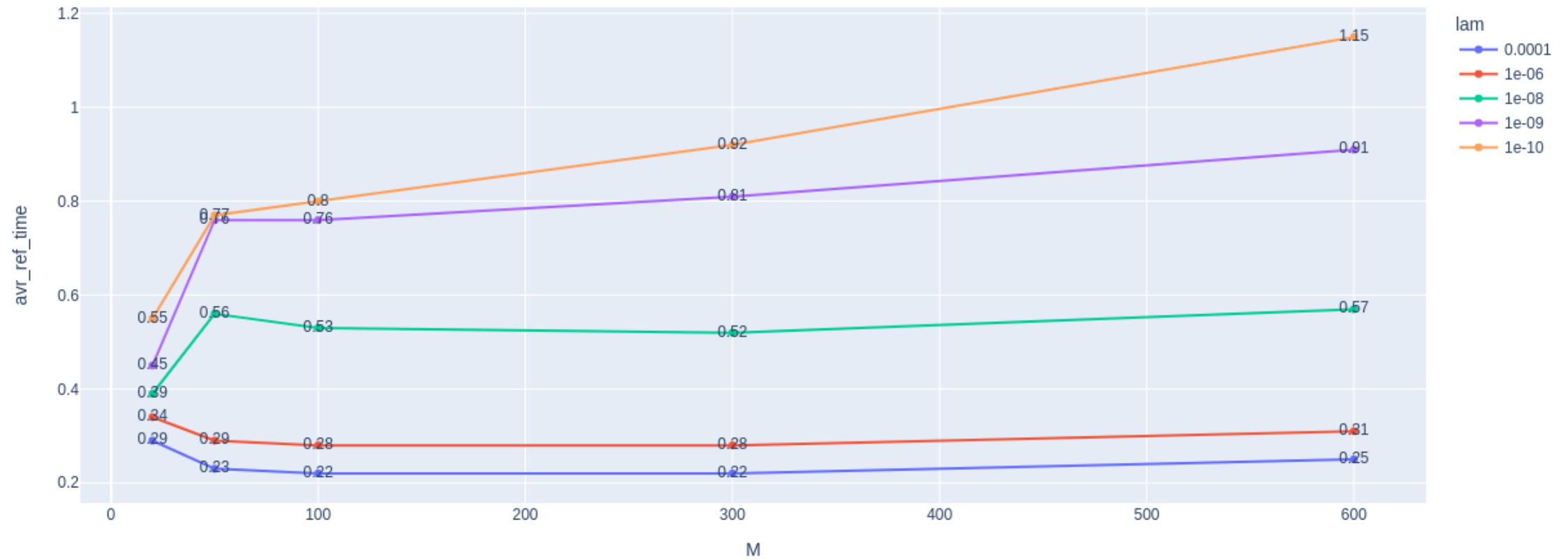
Optimization of parameters of the model (M and Lambda)

- In this part, I gave the model different lambda and M to collect the average t over 300 number of toys.
- I also collect the average time that took for the model to perform a single toy on the reference dataset.

Avr_tref--vs--M (N_0= 1500, N0= 800)



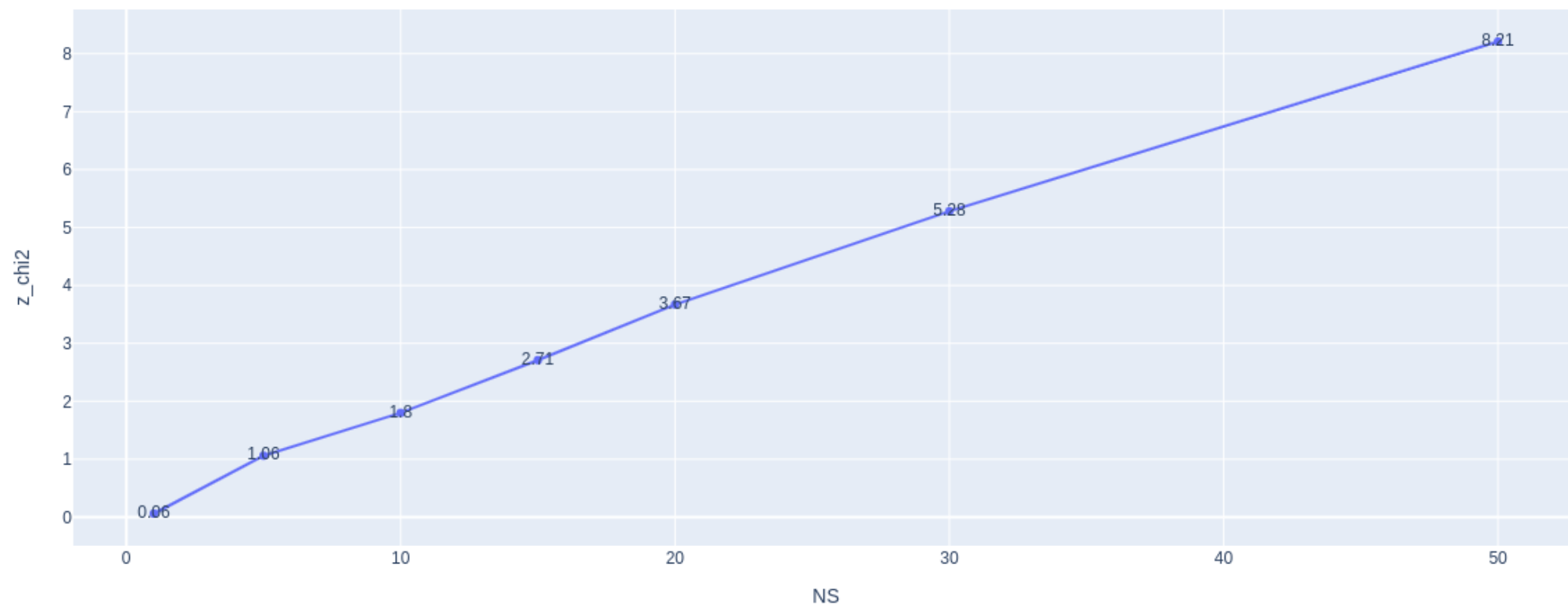
Average reference time --vs--M (N_0= 1500, N0= 800)



Optimization of parameters of the dataset (N_0, N0, and NS)

- The first analysis is to change NS, while keeping other parameters fixed to get the impact of NS on the model.
- Fixed parameters : $\text{Lambda} = 1\text{e-}8$, $M=300$, $N_0=1500$, $N0=800$

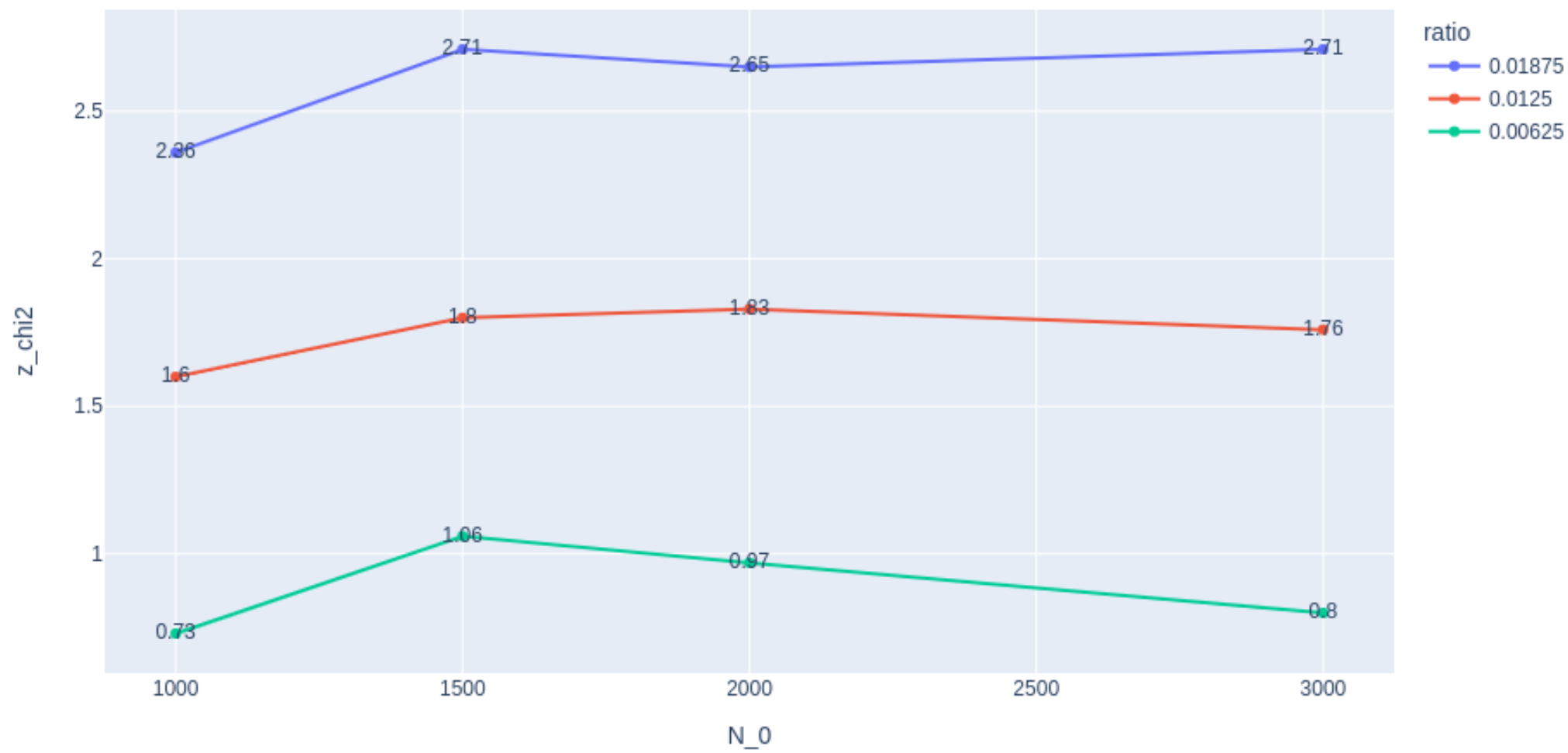
Z_Chi^2--vs--NS (M= 300, lam= 1e-8)



Optimization of parameters of the dataset (N_0, N0, and NS)

- The second analysis is to fix the ratio $NS/N0$ and change N_0 in order to find its impact
- Fixed parameters : $\text{Lambda} = 1e-8$, $M=300$

Z_Chi^2--vs--N_0 (M= 300, lam= 1e-8)



Optimization of parameters of the dataset (N_0, N0, and NS)

- Last analysis in this section is to keep NS/N0 fixed but change them to find the impact of N0.
- Fixed parameters : $\text{Lambda} = 1\text{e-}8$, $M=300$, $N_0=1500$

Z_Chi^2--vs--N0 (M= 300, lam= 1e-8, N_0= 1500)

