**Project report**

**What is the size of the search space (use scientific notation)?**

6 real parameters each valued between -100 and 100 => search space = 1.26 x 10^33

**What is your fitness function?**

The fitness function is the average distance to the real trajectory at all points t of "position\_sample.csv" for x and y (so a tuple of 2 distances, one for x and one for y)

**Describe the operators implemented (mutation, crossover)?**

Crossover: we crossover two individuals by creating two new individuals made up of the first 3 parameters of the first individual with the last 3 of the second individual and vice versa.

Mutation: we randomly choose one parameter of the individual and assign it a random value between [-100; 100]

**Describe your selection process.**

We select the 150 best (minimum fitness) individuals of the population.

**What is the size of your population, how many generations are needed before reaching a stable solution?**

We take a population of size 250 individuals. On average, it takes 150000 generations to find a solution (it's very variable).

**How much time does your program take on average (over several runs)?**

On average, it takes about 1 hour and 15 minutes to converge to a solution. (Very variable)

**If you have tested different solutions that have not worked as well, describe them and discuss them.**

I tested another fitness function: average distance of the real x and y trajectory in a single value.